

Swartz indicted for JSTOR theft

Digital activist gained access through MIT network drops

By Connor Kirschbaum
STAFF REPORTER

Aaron H. Swartz is an accomplished 24-year-old by anyone's standards. He co-authored the now widely-used RSS 1.0 specification at age 14, was one of three owners of the massively popular social news site Reddit, and recently completed a fellowship at the Harvard Ethics Center Lab on Institutional Corruption.

On Jan. 6, 2011, Swartz allegedly entered the basement of MIT's Building 16, using his white bicycle helmet as a mask to hide his identity from passersby. A federal indictment, unsealed on July 19, describes his entering a restricted network wiring closet, retrieving a laptop and external hard drive he had hidden there under a cardboard box weeks before, and cautiously stepping out of the wiring closet with his makeshift mask in place.

According to the indictment, Swartz's laptop had been using MIT's network to rapidly download articles from JSTOR. JSTOR is an archive of academic journals to which many universities, including MIT, pay large amounts of money for access. The indictment



describes these events as the final phase of Swartz's three-month JSTOR downloading operation, bringing his total count of acquired JSTOR articles to 4.8 million. MIT valued that information at \$50,000, according to the Cambridge Police incident report.

Swartz's intention, the indictment claimed, was to upload all of the documents to a peer-to-peer file-sharing site, where anyone could access them for free.

He never got the chance. Within two hours of fleeing Building 16, Swartz was captured by Secret Service Agent Michael Pickett, in what was the culmination of three months of detective work by MIT Information Services & Technology, the MIT and Cambridge Police Departments, and the United States Secret Service.

"Ghost laptop"

Aaron Swartz's alleged JSTOR downloading operation was far less daring in its early stages. The indictment states that it started on Sept. 24, 2010 — three months before his arrest — with the purchase of an Acer laptop from a local store. The

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The Nissan Leaf

Is electric the new gas?

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A TASTE OF AFRICAN CUISINE

Baraka Café provides tender dishes without costing an arm and a leg. ARTS, p. 16

DIVERSITY IS HERE TO STAY

Terrorists must stop distorting religion to justify their actions. OPINION, p. 5

WHEN PATRIOTISM STRIKES

Captain America misses the mark.

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A BIRD'S-EYE VIEW

Srikanth journeys to the roof of the Green Building to capture a stunning panorama for this issue's Institute Double Take. CAMPUS LIFE, p. 8

DEMONICALLY DIFFICULT

Demon's Souls is a challenging, engrossing journey full of death.

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Barbecue gathers prefrosh, alums

MIT Club of Boston throws annual party at Sidney-Pacific



JOANNA KAO—THE TECH

MIT alumni and current students line up on Sunday at the MIT Club of Boston (MIT COB) barbecue to grab food off the grill prepared by MIT COB volunteers. Over 300 people attended, and nearly 70 people volunteered for the annual event held in the courtyard of the Sidney-Pacific Graduate Residence.

By Joy E. Lee
STAFF REPORTER

A range of generations of the MIT community gathered at Sidney-Pacific for the annual barbecue of the MIT Club of Boston this past Sunday.

Alumni, their children, current students, and incoming freshmen mingled amid food and activities under the hot summer sun. The club sponsored the event for prefrosh and MIT affiliates in the greater Boston area, providing activities for children as

well as opportunities for alumni to reconnect with each other and to meet current students.

While most of the current undergraduate students who attended

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NEWS ANALYSIS

Court rules for NIH in stem cell case

Embryonic stem cell research can continue, Sherley may appeal

By John A. Hawkinson

STAFF REPORTER

The latest battle over human embryonic stem cell research is over, and the National Institutes of Health has won — the research can continue. The war can still go on with appeals, potentially as high as the Supreme Court, but researchers are unlikely to face court-

ordered prohibitions on research as that multi-year process continues.

Last week Wednesday, the United States District Court for the District of Columbia dealt a decisive victory to the NIH. Chief Judge Royce C. Lamberth ruled in favor of the NIH and human embryonic stem cell (hESC) researchers. The losers were adult stem cell researchers James L. Sherley and Theresa

A. Deisher, who had argued that government funding of human embryonic stem cell research violated a congressional appropriations rider (the Dickey-Wicker amendment) that bans funding "research in which a human embryo or embryos are destroyed."

The case has twisted in and out of

Stem cells, Page 14

New Building Services tool on MIT Mobile App allows for easy work order submissions

The MIT Mobile App service, available for the iOS and Android platforms as well as the most recent feature phones, has a new widget for the MIT Department of Facilities. The new Building Services tool allows users to easily report on-campus maintenance issues, such as problems with leaks, lighting, and locks. The widget can mark the problem site by detecting a user's current location using GPS, or the user can select a building or area from a list. The user also has the option to upload a photo of the problem. The widget takes those data and submits a work order to the Department of Facilities. The new widget "allows our customers to report things as they see them," said Ruth T. Davis, manager of communications for the Department of Facilities.

The primary way to submit work orders and on-campus maintenance issues will continue to be at the Facilities work order webpage, http://web.mit.edu/sapweb/PS1/facilities_home.shtml. Problems can also be submitted to Facilities by emailing txtdof@mit.edu or calling (617) 253-4948.

—Joanna Kao

IN SHORT

Microsoft Office Professional is now available for students on a single personal machine. Downloads are available at <https://msca.mit.edu/>.

MIT's chapter of Delta Kappa Epsilon is being sued by Belfour Inc., a property restoration and repair service company.

The MIT Student Extended Insurance Plan has changed to provide more benefits for students. Check http://medweb.mit.edu/healthplans/student/student_plan.html for details.

MIT was ranked No. 1 in six engineering categories in the QS World University Ratings this past month.

More flexible reimbursement choices are now available on the SAPweb website for MIT expenses. Check http://web.mit.edu/sapwebss/PS1/money_home.shtml.

No taxes next weekend! Statewide tax free weekend is August 13–14.

Send news information and tips to news@tech.mit.edu.

States take economic recovery into their own hands

DENVER — Here is one measure of the nation's lingering economic trouble and the political anxiety festering in state capitals over jobs and angry voters: 500.

That is the number of laws, at a minimum, that have been passed and signed by governors since Jan. 1 that were aimed in some fashion at economic recovery, according to the bipartisan National Conference of State Legislatures.

But with most states strapped and struggling to balance their budgets — and with Washington planning trillions in cuts in coming years — there is also painfully little money available to dive in with ambitious job-creation programs or investing in infrastructure, for example. If anything, the debt deal struck in Washington this week, with its attendant cuts in the federal budget, will only increase the pressure on state and local governments.

The result is a scattershot of economic body-building ideas and innovations mostly on the cheap.

Hawaii, for example, authorized an emergency transfer of money from environmental cleanup to economic development.

Indiana declared methane gas from landfills to be a "renewable energy source," thus allowing incentives to be paid from an existing energy jobs fund.

Colorado is trying a bottom-up approach, looking for ideas — through meetings and sessions in every county — about what might work in creating jobs and what should be dumped as a hindrance.

And some states have found even budget-conscious innovation to be too costly. Florida began a pilot project several years ago based on what is called "economic gardening," which involves helping businesses solve problems through things like virtual consultants. Other states have since embraced the idea, but this year, Gov. Rick Scott, a Republican, vetoed continued financing for the program.

—Kirk Johnson, *The New York Times*

Toyota, rebounding from quake, increases profit forecast

TOKYO — Citing a quicker than expected recovery from Japan's earthquake, the Toyota Motor Corp. raised its full-year profit forecast by almost 40 percent Tuesday, although it warned that a strong yen continued to weigh on its bottom line.

Toyota and other Japanese automakers have staged a striking comeback from the March earthquake and tsunami, as parts makers swiftly repaired their factories or switched production lines.

Toyota, the world's largest automaker, said it expected a net profit of 390 billion yen, or \$5 billion, for the business year that ends next March. In an earlier postquake forecast, it projected net profit of only 280 billion yen.

The revised estimate came as Toyota posted a 1.1 billion yen net profit for the April-June quarter. That was the period most affected by the magnitude-9 earthquake and tsunami March 11, damaging factories and severing supply chains.

On Monday, the Honda Motor Co. increased its profit forecast for the current fiscal year by 18 percent, to 230 billion yen.

Last week, Nissan, which is much less dependent than Toyota on production in Japan, posted a 85.02 billion-yen profit for the April-to-June quarter that was more than twice the mean estimate of analysts forecasts compiled by Thomson Reuters.

In Toyota's case, its plants have tried to make up for lost production with extra shifts. The company now expects to lose 150,000 units in global output for the year, compared with an earlier estimate of 450,000 reported by Bloomberg. In the year ending next March, Toyota now expects to produce 7.72 million units, up from a previous forecast of 7.39 million.

Robust sales elsewhere in Asia are contributing to Toyota's recovery, the company said. In China, sales rose 30 percent in July, rebounding from a plunge of more than 50 percent in the previous three months.

—Hiroko Tabuchi, *The New York Times*

WEATHER

Rainstorms usher in cooler temps

By Vince Agard
STAFF METEOROLOGIST

After a passing low pressure system brought thunderstorms and torrential downpours to our area yesterday evening, a cooler air mass is now settling over the region. The cold front with which yesterday's storms were associated has brought an end to the uncomfortably hot temperatures of the past few days. Instead, a more pleasant weather pattern will be in place for the remainder of the week, with overnight lows

in the mid 60s, and afternoon highs in the mid to upper 70s. Skies will be mostly sunny, and an afternoon seabreeze will keep things from getting too hot.

Meanwhile, the weather is considerably less pleasant in the Caribbean, where tropical storm Emily has become the fifth named storm of the 2011 Atlantic hurricane season and is expected to strike the island of Hispaniola later today. The storm could affect the east coast of the United States by the beginning of next week.

Extended Forecast

Today: Partly sunny with clouds building in the afternoon and evening. Wind N at 6-8 mph, becoming E. High 76°F (24°C).
Tonight: Mostly cloudy. Winds E at 6-8 mph, becoming calm. Low 65°F (18°C).
Tomorrow: Mostly sunny. Winds becoming E at 7-9 mph. High 78°F (26°C).
Friday: Mostly sunny. Highs in the high 70s°F (26°C).
Saturday: Partly sunny. Highs in the high 70s°F (27°C).
Sunday: Partly cloudy with a chance of showers and thunderstorms. Highs around 80°F (27°C).

Debt ceiling bill becomes law, averting default

By Jennifer Steinhauer
THE NEW YORK TIMES

WASHINGTON — The Senate voted Tuesday to raise the government's debt ceiling and cut trillions of dollars from its spending, concluding a long and fractious partisan battle just hours before the government's borrowing authority was set to run out.

The bill, which passed 74-26, was immediately signed by President Barack Obama, who took a final shot at his Republican opposition for what he called a manufactured — and avoidable — crisis.

"Voters may have chosen divided government," he said, "but they sure didn't vote for dysfunctional government."

Voters will render their verdicts on the merits of divided government next year, but its impact is now abundantly clear: The agenda of the 112th Congress will be dominated by continuous fighting over spending priorities and regulation, with a high bar for big debates on foreign policy and other domestic issues coming to the fore.

"When was the last time anybody said anything about Libya?" said Rep. Phil Gingrey, R-Ga., who was elected in 2002. "This is the way it is going to be until the election."

In the seven months since the change of power in the House, the Washington discourse has shifted almost completely from the decades-long battle between both parties over how to allocate government resources to jousting over the moral high ground on imposing austerity, with seemingly none of the political or practical motivations that have historically driven legislation.

Republicans, though controlling only one-third of the process through their majority in the House, appear to have firmly snagged the upper hand in the legislative dynamics, largely because of their unwillingness to sacrifice ground even when their stance threatens both the government's ability to operate and pay its debts, and their own prospects for retaining their jobs.

"The difference is the intention,"

said David R. Mayhew, a political science professor at Yale. "The Republicans have the Tea Party, and the Democrats don't have anything of comparable animation on their side."

Democrats, hamstrung in part by congressional procedures and hewing to more traditional methods of compromise and negotiation, allowed Republicans to pull the center of debate much closer to their priorities.

"We could draw parallels and distinctions with other tumultuous times such as the Civil War," Glen Browder, a former congressman from Alabama and professor emeritus at Jacksonville State University, said in an email. "But I do believe that this is something different from most Democrat-Republican struggles in our recent history. The traditional game of politics in which the two sides contest over control of issues and decisions for core constituencies has erupted into an intense struggle with critical ideological/philosophical divisions about what America means and how America ought to work."

Heat wave and fasting add to woes of Iraqis

By Michael S. Schmidt
THE NEW YORK TIMES

BAGHDAD — Iraqis still live in a nation where bombings are a nearly daily occurrence, government paralysis is routine and corruption is de rigueur.

But having endured all of that, these beleaguered people are struggling with the convergence of two events that test even the extraordinary mettle of Iraqis: Ramadan has begun in the midst of a heat wave.

And it is not just any heat wave, but an Iraqi heat wave where it is over 120 degrees. One where stepping outside makes your lungs seize up and your face feel as if it is burning. It is so hot, even for this chronically hot country, that on Monday the Iraqi government took the unprecedented step of declaring a heat day, telling all government employees to stay home.

But that is only half of the chal-

lenge. During Ramadan, the faithful may not eat — or more important, drink — during daylight hours. That has prompted some to say they simply would have to skip the fast, even though it is one of the primary religious obligations for Muslims.

"It is impossible to fast and work with this heat, so I'm not fasting this year," said Ahmed Kareem, 20, as he cleaned a broken engine. In many Muslim nations in the region, those fasting retreat to air-conditioned homes where they sleep for most of the day, rising in time to break the fast and feast all night. But in Iraq, there are just a few hours of electricity each day.

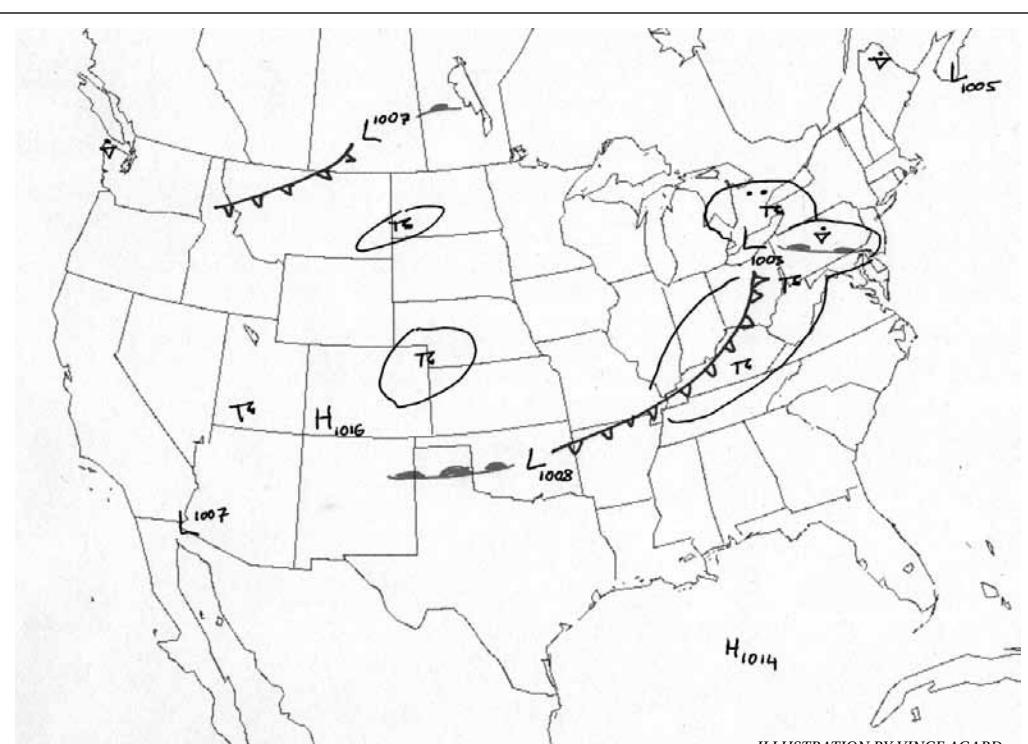
For some this has become too much, causing them to fall back into familiar ways of coping: concocting conspiracy theories, lashing out violently and stealing from their neighbors.

"These people are trying to humiliate Iraqis," said Nawar Mohsen,

53, suggesting the United States was somehow behind the heat wave, or at least the lack of electricity. "They did that when they embarrassed us with sanctions, and now they are fighting every Iraqi in their houses by taking away their comfort."

"Since I was born it was hot in July and August like this," said Mohsen, who is the owner of a car painting shop. "But now there is no electricity and services from the government, so they need to make it seem like it's hotter than usual to give them an excuse for not providing us with electricity."

William J. Syrett, who teaches meteorology at Pennsylvania State University, said it was 124 degrees in Baghdad on Tuesday, matching an all-time high for the capital. In the southern city of Diwaniya, the temperature climbed to 126 degrees. Some records say the country's all-time high is 126, while others say it is 131, he said.



Weather Systems	Weather Fronts	Precipitation Symbols	Other Symbols
High Pressure	Trough	Snow	Fog
Low Pressure	Warm Front	Rain	Thunderstorm
Hurricane	Cold Front	Light	Haze
	Stationary Front	Moderate	
		Heavy	

Compiled by MIT Meteorology Staff and *The Tech*

Trial of deposed Egyptian leader may alter region

By Anthony Shadid
THE NEW YORK TIMES

CAIRO — The headlines of newspapers on sale in a subway station once named Mubarak, and now renamed Martyr's, captured the moment Tuesday that could prove one of the most remarkable in modern Arab history: "The pharaoh in the cage of the accused."

"This is a true moment of the revolution," said one passenger, Mohammed Fathi, as trains hurtled through the din of a heaving Cairo.

The cage is precisely how it sounds — a pen barricaded with metal bars, the kind behind which the assassin of Anwar Sadat was tried 30 years ago. The pharaoh is Sadat's successor, Hosni Mubarak, a former war hero, president and strongman toppled by the epic protests that gathered in Tahrir Square in February, who is scheduled to face trial Wednesday with his two sons, the former interior minister and six senior police officers.

By nightfall, there was still suspicion over whether Mubarak, con-

valescing in a hospital in a Sinai resort, would attend the trial, which will convene in a police academy in Cairo that, like the subway station, once bore his name. But the anticipation rippled across the unsettled landscape of today's Egypt, where the revolution to overthrow him has proven far easier than the aftermath of building a new order.

In subway stations, libraries, schools and streets of a city seething with summer heat and short tempers, there was a sense of awe, anticipation and doubt at the trial of a figure whose imperial power was once so distant and uncontested that a famous Egyptian novel simply called him the Big Man. In conversations Tuesday over his fate, often heard were cries of justice, calls for vengeance and sentiments in between that felt cathartic.

"Who would have ever imagined that Mubarak would be tried?" asked Ahmed Abdullah, 30, a mechanic, standing before a school once named for Mubarak and now bearing the name of Islam's first public crier called a muezzin. "Re-

ally, who would have believed?"

"Or his sons?" added a friend, Mohammed Ibrahim.

"It's so strange," Abdullah replied.

Even the very prospect of Mubarak's trial seemed to mark a new moment in the Arab world. It is perhaps comparable to the capture, trial and execution of Saddam Hussein, although he was overthrown by a U.S. invasion based on a pretext that proved false. Mubarak was felled by a popular revolution. The scene of Mubarak standing before a judge may, in fact, make the Arab revolts in Syria, Libya and Yemen all that much more difficult to resolve. Some Arab officials have said that prosecuting Mubarak will make strongmen facing their own uprisings more reluctant to leave.

But few in Egypt, even those uneasy at the idea of an ailing 83-year-old facing charges that carry the penalty of death, worried about those implications. In a country so long ruled by the arbitrary whims of the unaccountable, they felt something had changed.

Republicans seeking election wary of embracing the tea party

WASHINGTON — The success of Tea Party-backed lawmakers in defining the terms of the debt debate in Washington has further cemented the party's identity as part of a conservative movement insistent on deep spending cuts, lower taxes and smaller government.

But as Republican candidates gear up for 2012, many are struggling with whether to embrace those passions. Opposing the debt ceiling increase and linking with the Tea Party may help candidates tap into a reservoir of energy in their party's electorate. But it also threatens to alienate the candidates from independent voters who grimaced at the bickering in Washington and preferred greater compromise.

"The process didn't please anyone, but it was very clear that the new congressmen elected in 2010 dramatically shifted the debate from how much more shall we spend to how much shall we cut," said Whit Ayres, a Republican pollster.

In the 2012 elections, the strategic calculation for Republican candidates weighing Tea Party ties "depends on the state, depends on the politician and it depends on the particular race," he said.

Evidence of political uncertainty is everywhere, and this week's debt votes in Congress highlighted the Republican soul-searching, doing little to clarify a simple path to Republican victory.

—Michael D. Shear, *The New York Times*

Cubans prepare for big step toward capitalism

HAVANA — Jose is an eager almost-entrepreneur with big plans for Cuban real estate. Right now he works illegally on trades, linking up families who want to swap homes and pay a little extra for an upgrade.

But when Cuba legalizes buying and selling by the end of the year — as the government promised again this week — Jose and many others expect a cascade of changes: higher prices, mass relocation, property taxes and a flood of money from Cubans in the United States and around the world.

Private property is the nucleus of capitalism, of course, so the plan to legitimize it here in a country of slogans like "socialism or death" strikes many Cubans as jaw-dropping. Indeed, most people expect onerous regulations and, already, the plan outlined by the state media would suppress the market by limiting Cubans to one home or apartment and requiring full-time residency.

Yet even with some state control, experts say, property sales could transform Cuba more than any of the economic reforms announced by President Raul Castro's government. Compared with the changes already passed (more self-employment and cellphone ownership) or proposed (car sales and looser emigration rules), "nothing is as big as this," said Philip Peters, an analyst with the Lexington Institute.

—Damien Cave, *The New York Times*

Drugs don't ease vets' post-traumatic stress, study finds

Drugs widely prescribed to treat severe post-traumatic stress symptoms for veterans are no more effective than placebos and come with serious side effects, including weight gain and fatigue, researchers reported on Tuesday.

The surprising finding, from the largest study of its kind in veterans, challenges current treatment standards so directly that it could alter practice soon among doctors treating returning military personnel, some experts said.

Ten percent to 20 percent of those who see heavy combat develop lasting symptoms of post-traumatic stress disorder, and about a fifth of those who get treatment receive a prescription for a so-called antipsychotic medication, according to government numbers.

The new study, published in the *Journal of the American Medical Association*, focused on one such medication, Risperdal. But experts said that its results most likely extend to the entire class, including drugs like Seroquel, Geodon and Abilify.

—Benedict Carey, *The New York Times*

Markets plunge amid storm of bad news

As the debt-limit drama ended in Washington on Tuesday, storm clouds thickened in the financial markets.

The broader U.S. stock market dropped 2.6 percent, erasing all of its gains for the year. That capped a string of declines over seven consecutive days, its longest losing streak since October 2008.

Fears of a sovereign default in either Italy or Spain re-emerged, and the interest rates on those countries' bonds soared. U.S. Treasury yields fell sharply to their lowest level in nearly a year as investors fled to the safety of American assets but also fretted over sclerotic economic growth. Gold, seen as another safe haven, leapt to a record high.

European markets kicked off the descent and the United States soon followed, despite Senate approval of an agreement to lift the debt ceiling and cut more than \$2 trillion from federal spending.

The markets and the breaking of the budget impasse have been overwhelmed by bad economic news and the chances of more. Market analysts and economists made clear that even though the debt-limit agreement averted a potential default on U.S. debt, the drawn-out process had taken its toll.

Recent economic data is already weak, said Stanley Nabi, the chief strategist for Silvercrest Asset Management Group, noting the GDP revisions on Friday that indicated the recession was deeper and the recovery more fragile than originally thought. On Tuesday, the Commerce Department said personal spending fell 0.2 percent in June, the first time it has declined since September 2009. And now that the debt-ceiling deal has offered up the prospect of lower spending from the government, Nabi said, "Who is going to drive the economy?"

—Christine Hauser, *The New York Times*

US worries about AAA, a rare rating in business

By Eric Dash
THE NEW YORK TIMES

Hanging over the debt ceiling negotiations in Washington has been the threat of the U.S. losing its AAA credit rating, a coveted measure of the federal government's financial strength. But in corporate America, the top rating long ago became an anachronism.

Scores of big companies have lost their AAA status in recent years — only four continue to hold the rating — as it became seen in board rooms as more of a straitjacket than a path to riches. Just as many consumers relied on their credit cards to finance a higher standard of living, companies took on more debt to reap bigger returns.

The choice did not appear to hurt them. The borrowing costs of companies with AAA ratings and those one level below are not that far apart. Investors, in other words, do not see much difference in quality.

"It's like you are going from a

Rolls-Royce to a Mercedes — not from a Rolls-Royce to a Yugo," said Chris Orndorff, a senior portfolio manager for the bond giant Western Asset Management. "That's nothing to be ashamed of."

More and more, in fact, companies have found that a AAA credit rating is not something worth aspiring to if a more conservative approach means lower profits.

Today, markets often render credit judgments before the rating agencies can take out their pens, so a downgrade has a less noticeable effect. By that time, many of the traditional benefits of being deemed AAA, like lower borrowing costs and reputational glow, have evaporated.

In the early 1980s, around 60 companies had top-flight AAA credit. By 2000, the number of AAA companies was about 15. Today just four organizations — Automatic Data Processing, Exxon Mobil, Johnson & Johnson and Microsoft — can claim those once-coveted three initials.

Analysts say corporate buyouts and acquisitions accelerated the trend. Many AAA companies lost their ratings when they were taken over and their new owners loaded them with cheap debt to help pay for the deal. Other strategic decisions also triggered downgrades.

UPS, for example, struck a long-term agreement with its union workers in fall 2007 that raised pay and benefits but froze certain pension obligations. Soon after, the ratings agencies started knocking down the company's credit rating to AA because of the new pension arrangement.

"Maintaining a AAA rating is not a financial goal of this company," a UPS spokesman said at the time. Investors barely reacted. In the three months after the downgrade, yields on UPS bonds responded by increasing about 0.4 percentage point from 5.32 percent. Today, with borrowers enjoying ultra-low interest rates, the bond yields are back to their levels in late 2007.

US seeks more pressure on Syria, but options are limited

By Steven Lee Myers
and Neil MacFarquhar
THE NEW YORK TIMES

WASHINGTON — The Obama administration is facing intensifying calls to punish Syria more forcefully for its bloody crackdown of protests, but officials say that without broader international support they have few options to increase pressure on President Bashar Assad's government.

A group of senators introduced legislation on Tuesday that would impose even stronger economic sanctions against Syria than those already imposed against Assad and a coterie of senior aides. Italy, meanwhile, withdrew its ambassador to Syria and called on other nations to do so, echoing calls by Republicans for President Barack Obama to do the same.

In New York, the United Nations Security Council met for a second day on Tuesday to discuss the vio-

lence, but remained divided over how strongly to react to it. A spokesman for the United Nations secretary general, Ban Ki-moon, issued the organization's sharpest criticism yet, saying Assad had "lost all sense of humanity."

In Washington, administration officials vowed tougher measures but stopped short of announcing any new ones, underscoring how difficult a diplomatic and political challenge the continued crackdown in Syria has become for Obama.

The administration plans to expand existing sanctions first imposed in May, officials said, but the legal process for doing that has lagged behind Syria's accelerating violence against protesters, including brutal attacks that began on Sunday in Hama and other cities. The conflict has claimed the lives of more than 1,500 Syrians since March, according to the United Nations, which cited human rights

groups' reports.

The U.S. ambassador to Syria, Robert S. Ford, testifying before the Senate on Tuesday, said sanctions against senior Syrian officials were beginning to bite. He also disclosed that the administration was discussing additional sanctions with the Europeans that would have a more direct effect.

"Unilaterally, additional American measures are not going to have that big an impact," Ford said. Underscoring the administration's clear but not explicitly stated goal of a new government in Syria, he said it was important that any punitive sanctions be calibrated in such a way as to not devastate the economy in a "post-Assad" era.

After initially holding out hope that Assad would heed the protests that have swept the Arab world this year, Obama has steadily intensified his criticism — only to watch Syrian security forces respond to protesters with more and more force.

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LETTERS TO THE EDITOR

Exclusion stings

Editor's note: This letter was addressed directly to Ryan Normandin. To view more commentary his July 6 column, "Gay marriage should not be made legal," visit http://tech.mit.edu/V131/N29/normandin_cp.html.

I am in a long-term relationship with my partner of four years, and we're registered domestic partners in California. I read your article and noted that you made some valid points. Since the government decided to get into the business of marriage hundreds of years ago, they realized it served their interest to incentivize procreation. Valid. Marriage has its regulated boundaries about marrying one's first cousin, other relatives, etc. Also valid. However, the institution of marriage

has been expanded before; it was illegal in many states to marry someone of another race until the 1970s. I think we'd all agree that society looked at that marriage restriction and realized that it was no longer appropriate or in line with America's vision of equality, regardless of the government's interest or secondary gain in the matter.

There are arguments to never allow same-sex couples to access the institution of marriage. It seems to me that until you have a close friend or relative in your life who is in a same-sex relationship and wants to marry the person she or he loves, you likely will never be swayed. None of my arguments will sway you, I'm certain. Know that to hear "you can't because you're gay" stings in a way that is indescribable. I wonder if you might feel differently about gay marriage if you had to tell

a best friend, a sister, a beloved uncle that simple and painful phrase.

We're marginalized enough, trust me. I pay \$200 extra in federal taxes a month to have my partner on my health insurance plan. Yet if I had married a man, I wouldn't have to pay any tax to have him on my plan should he need health insurance. That is just the tip of the iceberg. To tell someone I'm gay is also an instant and dramatic loss of social status, as it is an abrupt change to go from being a member of the majority to the minority. It would mean the world to me actually have the dignity of saying that I, too, am married in the eyes of my country. I'm sure I'd feel the same way had I been born a heterosexual and fallen in love with an African-American man in Mississippi 40 years ago.

Jennifer Hopping Winn

Capitalize smarter, not harder

Merely raising capital requirements won't prevent a meltdown

By Keith Yost

STAFF COLUMNIST

Suppose for a moment that there are two farmers, Jim and Bob. Jim grows tomatoes, and Bob grows corn. Both crops take tractors to produce. Normally, corn and tomatoes are equally profitable, but this year, corn is expected to be 15 percent more profitable than tomatoes. Accordingly, Jim would like to loan out his tractors to a corn farmer and split the extra profits, while Bob is looking to borrow some tractors from someone else.

Because Bob and Jim don't know each other, and because finding each other serendipitously and negotiating terms would be too difficult, the two men instead go to a financial intermediary — a bank. For now, let's make two assumptions: first, that Jim and Bob live in a barter economy (tractor loans will be repaid in kind); and second, that the bank has no reserve requirement — it can loan out every tractor that is deposited into it. The bank offers Jim a deal: if he loans 100 tractors to the bank for one year, it will return his tractors at the end of that year. Jim will also get 107 extra tractors to produce tomatoes with the next year — a 7 percent return on his investment. Similarly, the bank offers Bob a deal: they'll loan him 100 tractors, and next year he'll give them 108 tractors — an 8 percent interest rate. Both farmers stand to gain, so they accept the offers. Of the 15 percent gain that was made from switching Jim's tractors to corn production, 7 percent goes to Jim, 7 percent goes to Bob, and the remaining 1 percent goes to the bank for bringing Jim and Bob together.

Now, let's say that the bank has a reserve requirement. For every 5 tractors that are lent to it, the bank needs to keep one in its vaults, just in case. How does this affect the best deal that the bank can offer to Jim and Bob?

If Jim decides to deposit 100 tractors in the bank, the bank will only be able to lend out 80 of those tractors, while 20 will sit idle. For the use of his tractors this year, Jim is going to demand at least 100 tractors next year. Meanwhile, Bob is not willing to pay more than a 15 percent interest rate: the most tractors he will offer to the bank next year in exchange for 80 tractors this year is 92. Even though society would be better off with Jim loaning his tractors to Bob, the restrictions of the reserve requirement cause

Jim to continue farming tomatoes, and Bob to grow only as much corn as his current tractor fleet allows.

Adding currency to this picture is an improvement, but only in select circumstances. In scenarios in which the reserve requirement is not enough to discourage Jim and Bob from making their mutually beneficial arrangements, a medium of exchange means that there won't be *actual* tractors moulder in someone's vault, and the would-be losses from those idle tractors will appear as a benefit to society in the form of lower prices. However, in marginal cases — like the reserve requirement example provided earlier — Jim will still not loan his tractors to Bob. The reserve requirement distorts the rate of return, and by preventing the re-allocation of resources, creates a net loss to society.

Reserve requirements help bank regulators differentiate between banks that are insolvent and banks that are illiquid.

Why then, one might ask, do we have reserve requirements on banks at all, if every non-zero reserve requirement is a market distortion? The answer is that reserve requirements help bank regulators differentiate between banks that are insolvent and banks that are illiquid, which allows for bank deposits to be guaranteed while minimizing the risk of banks abusing that guarantee.

Suppose one day Jim comes by to withdraw his deposits from the bank, but the bank can't accommodate him. There are two potential causes:

The first possibility is that the bank is illiquid. Jim has come asking for his tractors earlier than expected, and Bob has not yet harvested his crop. As soon as Bob's investment pays off, he will repay the bank and the bank will be able to repay Jim. But until then, the bank has a liquidity problem — while the bank has the assets to cover Jim's request, it cannot do so immediately.

The second possibility is that the bank is insolvent. The problem is not that Jim has come for his deposits too early, but that the bank has squandered his deposits on poor

investments. Perhaps rather than loaning out Jim's tractors to Bob, the bank went down to the local casino, put the tractors on red at the roulette table, and lost.

The government is obliged to guarantee Jim's deposits because without such a guarantee, much of modern banking would be impossible. Accordingly, the government is also obliged to respond when a bank is unable to meet its deposit demand. In the first scenario, it is in the best interests of all involved for the government to act as a lender of last resort to the beleaguered bank. But in the second scenario, no loans should be made — the bank does not have the assets to cover its liabilities, it is bankrupt, and the government should take ownership of the bank and divvy up its remaining assets before further losses of Jim's deposits occur.

Without a reserve requirement, the only thing separating a misjudgment of the bank's asset value on the part of the government and a loss of public moneys would be the fraction of a bank's liabilities that are not publicly guaranteed. Stockholders in the bank, for example, are not insured — a bank financed by half equity and half guaranteed deposits could lose up to 50 percent of its holdings before any harm came to the taxpayer. Reserve requirements add an extra layer of protection: given a large enough reserve requirement, there could be zero risk to guaranteed deposits.

In practice, reserve requirements are used sparingly relative to capital requirements. Capital requirements are similar conceptually, but while reserve requirements are designed to prevent the loss of guaranteed deposits by forcing a bank to keep some of its funds perfectly secure, capital requirements seek to prevent the loss of guaranteed deposits by preventing banks from creating huge risks for themselves. Capital requirements dictate the types of investments and bets that a bank can make. If Jim's bank insists on investing in an asset with a highly variable return (like a chip marker on red at the casino), it is going to have to make up for that risk with safer bets elsewhere. In contrast, a bank that invests in Bob's tractors is going to be able to loan out more of its funds. Like reserve requirements, the strictness of capital requirements represents a trade-off; on one hand, they promote saving by making guaranteed deposits viable, but they also

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OPINION POLICY

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Embrace, don't shoot

Multiculturalism and religious tolerance are not optional

By **Nina Sinatra**
OPINION EDITOR

Sorry, extremists — multiculturalism is no longer debatable. It is simply nonsensical to consider the 21st century world as something resembling a medieval kingdom of homogenous fiefs.

The sickening crimes of Anders Behring Breivik bring to a breaking point the paranoia that increasingly clouds modern societal and political perceptions.

Norway, a nation known for its open and active democratic dialogue, has been tagged with what many are calling a "loss of innocence" in the wake of last week's terrorist attacks. Speaking to BBC correspondents, Norwegian Prime Minister Jens Stoltenberg reflected that "[Norway has] never experienced anything like this before. We had to go back to the Second World War to find any kind of violence that is similar to what we experienced on Friday."

Perhaps equally alarming as Breivik's violent crimes was the rhetoric put forth by news agencies in the wake of the execution-style attacks. News outlets and pundits alike did not hesitate to suggest that a terrorist organization associated with extremist Islam was behind the killing spree. Doubtlessly, the revelation of a Norwegian native claiming to be a member of the Knights Templar and spouting a hate-filled manifesto has raised more than a few eyebrows.

But why should it? Enough is enough with religious and cultural profiling. The actions of Wahhabist extremists represent the true teachings of Islam roughly as much as Breivik's Nazi-laced manuscript characterizes the passive tenants of Christianity. In both cases, individuals have manipulated

and deformed peaceful religious teachings into twisted battle cries.

"My impression is that Christianity is used more as a vehicle to unjustly assign some religious moral weight" to his political views, commented Anders Romarheim, a fellow at the Norwegian Institute for Defence Studies. Other experts, having studied Breivik's manuscript, confirm that it reflects a fundamental ignorance of Christian the-

Individuals have manipulated and deformed peaceful religious teachings into twisted battle cries.

ology. On these bases, I would hesitate to make reference to Breivik purely as a religious extremist; his obsession with religion instead reads as a litany of intolerance (specifically anti-Muslim) toward the European immigrant and multicultural population, as well as the European Union. Nevertheless, Breivik's own misguided notions should not masquerade the fact that his appalling actions were intended and executed as a terrorist attack towards a specific group of individuals.

Cowardice and political posturing of this type crop up again and again in acts of terrorism within the last century, from the Unabomber (the writings of which were plagiarized into Breivik's manifesto) to the 1995 Oklahoma City bombing and the September 11th attacks — all of which have been continually referenced throughout last weekend's news proceedings. Rightfully so: the parallels between the four cases are striking.

The sad fact remains that although Breivik's actions were motivated by anti-multiculturalist sentiments, he chose to layer them under a religious veneer. Thankfully, although he professed that his actions are rooted in Christian teaching, the religion as a whole will not be judged for Breivik's maniacal extremism. "He was a flaky extremist who might as well have claimed to be fighting for the honor of Hogwarts as for the cause of Christ," quips Philip Jenkins, a Pennsylvania State University professor whose expertise centers on global religion and politics.

It is an unfortunate commentary on our culture that this courtesy is rarely extended to the Muslim population, who are too often judged on the crimes of madmen espousing their own warped and perverse misinterpretations of a theologically peaceful religion.

While Breivik's attorney claims that "he wanted a change in society, and from his perspective, he needed to force through a revolution. He wished to attack society and the structure of society," the overall effect instead smacks of a whining child in the midst of a temper tantrum. It is indeed an unfortunate indictment of society that multiculturalism has become the target of politics of hate. The underlying concerns and tensions of the changing dynamics of European society will not be appeased by rallies, lunatic manifestos, or acts of terrorism.

Instead, global onlookers should take this opportunity to restore proper focus to encouraging peaceful, rational, and unilateral dialogue that neither marginalizes immigrant communities nor grants them special privileges. The incorporation of religion into modern multicultural debates is at best a cowardly and distorted scapegoat. An hon-

est discussion with the intention of resolving conflict and strengthening society cannot exist in the presence of prejudice.

The path forward from this tragedy should not include additional persecution or inappropriate criticism of religious groups. The purpose of government is not to target any ethnic, cultural, or religious faction, but to protect citizens from violence and harm. Imam Khalid Latif, chaplain for NYU and Executive Director of its Islamic Center correctly affirms that "Our focus should be the safety of all citizens in any country from every act of violence or terrorism. By cultivating a narrative that says Islam is the problem, we keep ourselves from maintaining that focus. All terrorist acts stem from an idea that it's OK to resort to violence in order to get what you want; that it's OK to kill to get the kind of world that you would like; that if we disagree, we cannot co-exist peacefully."

Anders Breivik's massacre should remind us that terrorism is not limited to a pre-determined profile, to a region, or to any one ideology. We cannot hope to successfully combat intolerance and hate by upholding a narrow definition of who is targeted by persecution or what constitutes a terrorist. Economically, politically, and socially, our best interest is to coexist. The sheer volume of information available through digital media lends a heavy accountability; there no longer exists a viable excuse for ignorance.

From this tragic event, youth around the world should take one paramount message: the existence of a peaceful and successful global society begins with the achievable challenge of acceptance, tolerance, and mutual respect among nations, cultures, and religions.

Love, do not shoot, your neighbors.

Buddy from the East

China watches nervously as the US gets closer to default date

By **Andy Liang**
STAFF COLUMNIST

China has been compared to many things stereotypical: "a fiery dragon waking from its long sleep," "a skyward-reaching bamboo growing towards prosperity," and "a fortune cookie telling an everlasting fortune." Okay — maybe I made up the last one. But many economists speculate too often that China's market is on a meteoric rise. Although this prediction may be true, the recent debt debates blowing across Capitol Hill have presented themselves as a Great Wall for China.

China, our country's largest foreign debt holder, with U.S. Treasury security holdings of about \$1.16 trillion, is watching anxiously as we inch ever closer toward raising the debt ceiling. With \$14.3 trillion of federal debt, the U.S. has only until the deadline of August 2 to find a suitable plan. Otherwise, we default, and China has a panic attack. That's the last thing China wants. NPR reports that "China has been using diplomatic channels to express its concern. It has sent several official demarches urging Washington to abide by its financial commitments."

Indeed, China is showing its stress wrinkles, but it would be the U.S. developing bruises if we were to betray our national interest. Investors would think twice about investing in our nation again.

Our relationship with China is already on a thin thread — ever since we sold military arms to Taiwan last year, met with the Dalai Lama, disagreed with China's heinous human rights policies, called their weapons-building "non-defensive," charged them with heavyweight cyber-world hacking, and decried their trade abuses and currency depreciation. Oh, and calling China things like the "fiery dragon" doesn't help either. So I'm not surprised that China is slightly irritated with us. But this economic default hot potato may just be the straw that breaks the camel's back.

To us, China is a frenemy. They want to muscle us out as the top superpower, but they need our economy to be running smoothly. A severe economic stagnation for the U.S. means the same for China. Additionally, Beijing has very few options, according to Professor Patrick Chovanec at China's Tsinghua University. "By and large, [China] is stuck holding Treasuries and, in

fact, they're stuck buying more because it's embedded in their growth model. There are no markets that are as deep and liquid as the U.S. Treasury market for them to put all their dollars." China's market feeds off the U.S.

If you need more evidence, just run into a Disney store in China. The stores there are turned into English-language workshops for kids. Pearson PLC, the learning company, is buying 39 English schools in seven cities for \$145 million. Pearson predicts the language export to be an ever-expanding market.

Despite the rough past, the U.S. is beginning to see the Big Red Panda eye-to-eye. Recently, U.S. Chairman of Joint Chiefs of Staff Mike Mullen met with the People's Liberation Army General Chin Bingde. They toured each other's military facilities as a sign of trust. Mullen displayed his Predator drone and a live-fire exercise. Bingde showed his Su-27 jet fighter and a counterterrorism exercise. This playground exchange may seem inconsequential, but it could actually be groundbreaking. Military relations with China may finally gloss over icy tensions, and trust-building may begin.

An exemplar of trust-building is the U.S.

engagement of China in talks of their outer space programs. In 2008, a U.S. military missile shot down a disabled U.S. spy satellite, reasoning that it may be a threat to certain regions. This action drew speculation from China. A year later, China hit one of its own antiquated weather satellites with its own missile, and the Pentagon mirrored the speculation right back. Currently, China is developing many defense technologies, including jammers and lasers for their military space sector. If the U.S. is successful in hashing out agreements for space armament, China and the U.S. are off to a great start in mending military ties.

Not much is certain about how our debt dithering will turn out. China will just have to watch from the sidelines. Nonetheless, the precedent has been set — our military ties with China have been renewed. Only time will tell whether this Shangri-La of mutual peace will maintain.

Editor's note: Due to editorial deadlines, this column includes speculation about the resolution of the Congressional negotiations on the federal debt that were concluded August 2.

Capital requirements not sole cause of financial crisis

Greater fault lay with unaccountable credit rating agencies

Capital requirements, from Page 4

discourage saving by distorting downward the rate of return.

In the aftermath of one of the greatest liquidity crises our nation has ever faced, there is an understandable call to tighten capital requirements. Upon realizing that the risks of socialized losses were greater than we thought, it makes perfect sense to recalibrate how we make our trade-offs. However, the problem that led to the bust of our financial system was not that capital requirements were too loose, but rather that they were too dumb, and were susceptible to a common-cause failure.

What underpins our current capital requirement system is risk-weighting of a bank's capital. Very little in the way of reserves are necessary if a bank is holding mostly AAA-rated debt, but if it's holding junk bonds, the amount it can loan out will be very limited. This makes sense, given the government's goal of securing guaranteed deposits — if a bank isn't putting all of its stake on red at the casino, then less reserves are needed to make sure a bank's losses

don't exceed its non-guaranteed liabilities.

The problem with this risk-weighting is in determining what is risky. Much has been made of the poor bets on housing made by our financial system. What is less talked about is the reason *why* so many different, self-interested organizations independently made the same investment mistake. That reason is simple: the rating agencies that grade debt made a large error in judgment and rated many types of mortgages as much safer than they actually were. As a consequence, our capital requirement system incentivized every bank to purchase mortgage debt and hold it as an asset. Even if a bank had an accurate picture of the debt's actual worth, they would still be willing to pay more than the asset's actuarial value, because holding that debt would free them to make more investments than they would otherwise be allowed.

Normally, errors in judgment in the financial system even out. For every person with an overly optimistic view of tomato futures, there is someone else who is overly pessimistic. While there is the potential for correlated errors in judgment, they're the

exception, rather than the norm. By making the assessments of credit rating agencies part of the rules of the game, risk-weighting created a situation in which a very small set of actors — with none of their own resources on the line — were able to bias the judgment of the entire financial sector and create a massive misallocation of society's resources.

Raising capital requirements and reducing the investments that banks are allowed to take will make our banking system marginally more reliable, but it will also discourage saving — not a good thing for an economy that has historically saved much less than is optimal. It would be better to tackle the problem directly and bring competition to the credit-rating game. We need a risk-weighting of our risk-weighting — rather than have the government rely upon just a few hand-picked credit rating agencies to inform its capital requirements, it needs to draw from a more diverse set and weight their various judgments according to past performance. It needs to aggressively use the Securities and Exchange Commission's oversight to ensure competitiveness

between rating agencies. And it should even consider forming a public credit rating agency, whose judgments would be included on equal footing with private agencies in the weighted set of credit ratings.

Reform of our financial regulatory system is needed. The Dodd-Frank bill of 2010 was an excellent start: it took the unclear or non-existent procedures for seizing and unwinding insolvent financial institutions and formalized them, ending the "too big to fail" problem that plagued our initial response to the financial crisis. But developing the tools to respond to bank failure is not the same as preventing the failure from the start — Title IX, Subtitle C of Dodd-Frank prevents outright collusion between credit rating agencies, but it does nothing to mitigate honest accidents in the rating process; the prospect of a common-cause failure of our financial system is just as potent as ever. And the proposals being put forward today to reduce the frequency of future events are throwing out the baby with the bathwater. Demanding higher capitalization is an inefficient half-measure; what we need today is a rethinking of capitalization itself.

OPINION

CAR REVIEW

The Nissan Leaf: An improbable electric future

Solidly constructed, but poorly adapted to American lifestyle

By David M. Templeton
CONTRIBUTING EDITOR

I'm a fan of Formula One racing, the kind of guy that has seen every episode of the BBC's Top Gear ... six times. My idea of wealth is having a 10-car garage. It is with a heavy heart that I recognize a sad fact of life: in order to allow the weekend indulgence of driving a fast, gasoline-powered car, we're all going to have to start driving motors on the weekdays that do not consume fossil fuels. It is thus, ironically, that the widespread adoption of alternative-fuel vehicles will save the enthusiasts' 500-horsepower sports car.

This doesn't mean that going to work or picking up groceries needs to be the equivalent sensual experience of being locked in a white, padded room. In theory, in order for alternative fuel cars to take off, they should have as close of a driving experience to today's modest family hatchback as possible; buyers shouldn't feel like they are taking a step down in enjoyment for a step up in environmentalism. Alternative-fuel cars should match our current lifestyles and be affordable to boot. It is with this mindset that I attacked a test drive of the all-electric Nissan Leaf.

A Nissan representative came right out and told me that they're on a mission to win hearts and minds, not necessarily forge immediate sales. Many fear the Leaf is an ag-

grandized golf cart and that it is not suitable as more than a city runabout. In 2011, it turns out that the former is false, but the latter is true.

The first thing you notice when you get in the Leaf is that it is like every other small, modern, modest family hatch you've ever been in. There is rear legroom to seat five and enough room in the trunk for a serious excursion to Costco. Satellite navigation is standard, along with a bluetooth sound system. Upholstery is predictably cloth, but the seats are comfortable enough. The car starts with the press of a button; authentication is handled by the proximity dongle in your pocket.

It is after pressing the starter button that you notice the truth of the vehicle you are in: lithium polymer batteries under the front seats power up the accessories, and the engine is silent. The stubby gear knob allows you two selections of forward drive — regular and "Eco," which delays the throttle response to ease you into a more relaxed and energy-saving driving style. The electric motor has a nearly flat torque curve, allowing the single gear ratio to move the car efficiently from a standing start to beyond highway speeds (topping at 93 mph). Regenerative braking keeps your mileage up in stop-and-go driving.

So far, so good. The Leaf is definitely not a golf cart; it is a real car. Give it the beans, and



Battery temperature gauge on left; battery capacity gauge on right. More interesting is the top-center gauge, which fills to the right when energy is being spent by the motor, and to the left when it is being regenerated by braking. A more in-depth analysis of where the power is going can be found on the center console screen.

you can make the tires squeal briefly. Disc brakes stop you quickly, and the steering is fairly responsive. So what's the problem? The problem isn't the car — it's the context it's living in.

Gas stations with electric chargers are few and far between. Workplaces, parking lots, and parking garages with chargers are

equally sparse. (MIT Facilities did not respond to a request for information about campus charging accommodations.) This functionally limits your range from the Boston area to Worcester and maybe a run to New Hampshire for discount imbibements. The Leaf will not take you to New York City — even one way — unless you are a hypermiler.

Charging from a standard 120VAC 15A outlet is an overnight affair at best. 240VAC chargers can be installed for a hefty fee at your home and can charge the car 80 percent in 2-3 hours. 480VDC chargers can hit 80 percent in 30 minutes, but require the electrical service of a commercial building. In an urban community like Cambridge, where most people park curbside and landlords won't allow 240V-charger installations, the thought of hundreds of power cables spanning the sidewalks at night seems like an improbable electric future.

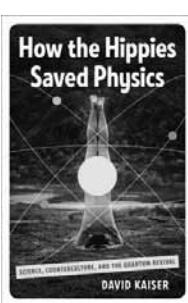
The Leaf is a good runabout, a perfect vehicle for companies like Zipcar, and a candidate for future taxis. Environmentalists love the zero emissions. But it is not ready for the masses: the Leaf does not fit the road-tripping American lifestyle. It is also dependent on a clean electric grid in order to fully realize the zero CO₂ emissions.

The Leaf is an important stepping stone to the alternative fuel future. But quick-charge batteries and very high power chargers (over 50kW) at every gas station and at home are the only way to make that future electric. There is still some science to be done with hydrogen fuel cell technology, and hydrogen filling stations are almost nonexistent outside of southern California, but the 5-minute fill up time fits the American way. Look for hydrogen to power the roads in 25 years and save the planet — and the gasoline-powered sports car.



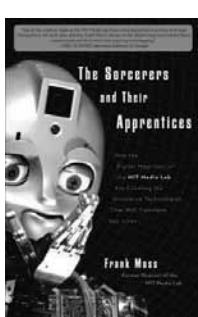
The Leaf's charging panel, underneath the Nissan badge on the front. SAE-J1772 inlet (right) for everyday AC charging, and JARI/CHADEMO inlet (left) for high-voltage DC charging.

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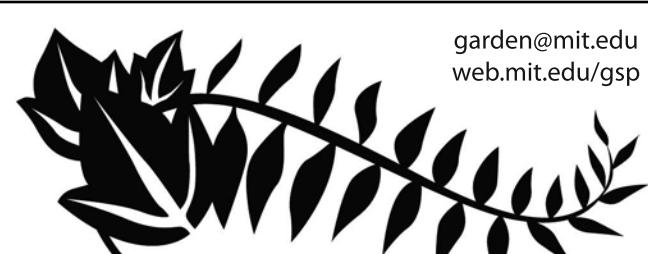
The Emirate of Ras Al Khaimah is ideally situated at the northernmost part of the United Arab Emirates and the fourth-largest in the country. Apart from being the destination choice for travellers owing to its unmatched natural beauty, it boasts a thriving economy, led by tourism, manufacturing and service industries.

We invite graduates from citizens of all nations who are considering establishing a career in an international arena and experience the warmth of a multi-cultural environment. At present we are searching for candidates who are specialists in the field of **Finance and Sales and Marketing**. Positions available cover different functions in different organizations, covering Real Estate, Hospitality and Tourism and Service Industries.

As an expatriate living and working in the UAE, you can expect a competitive salary, paid free of taxes in the UAE, free accommodation, transport, medical, flights and other benefits.

All applications will be reviewed in detail and those candidates selected for interview will be contacted directly. Due to the anticipated high volume of response, regrettably, only those shortlisted will be contacted. In the first instance, please forward a detailed resume to our HR Director at: richard@rakinvest.ae

garden@mit.edu
web.mit.edu/gsp



The Secret Garden

Book and Lyrics by Marsha Norman
Music by Lucy Simon
based on the novel by Frances Hodgson Burnett

PERFORMANCES:

Friday, August 5, 8:00 PM

Saturday, August 6, 8:00 PM

Sunday, August 7, 2:00 PM

Thursday, August 11, 8:00 PM (free for all MIT students)

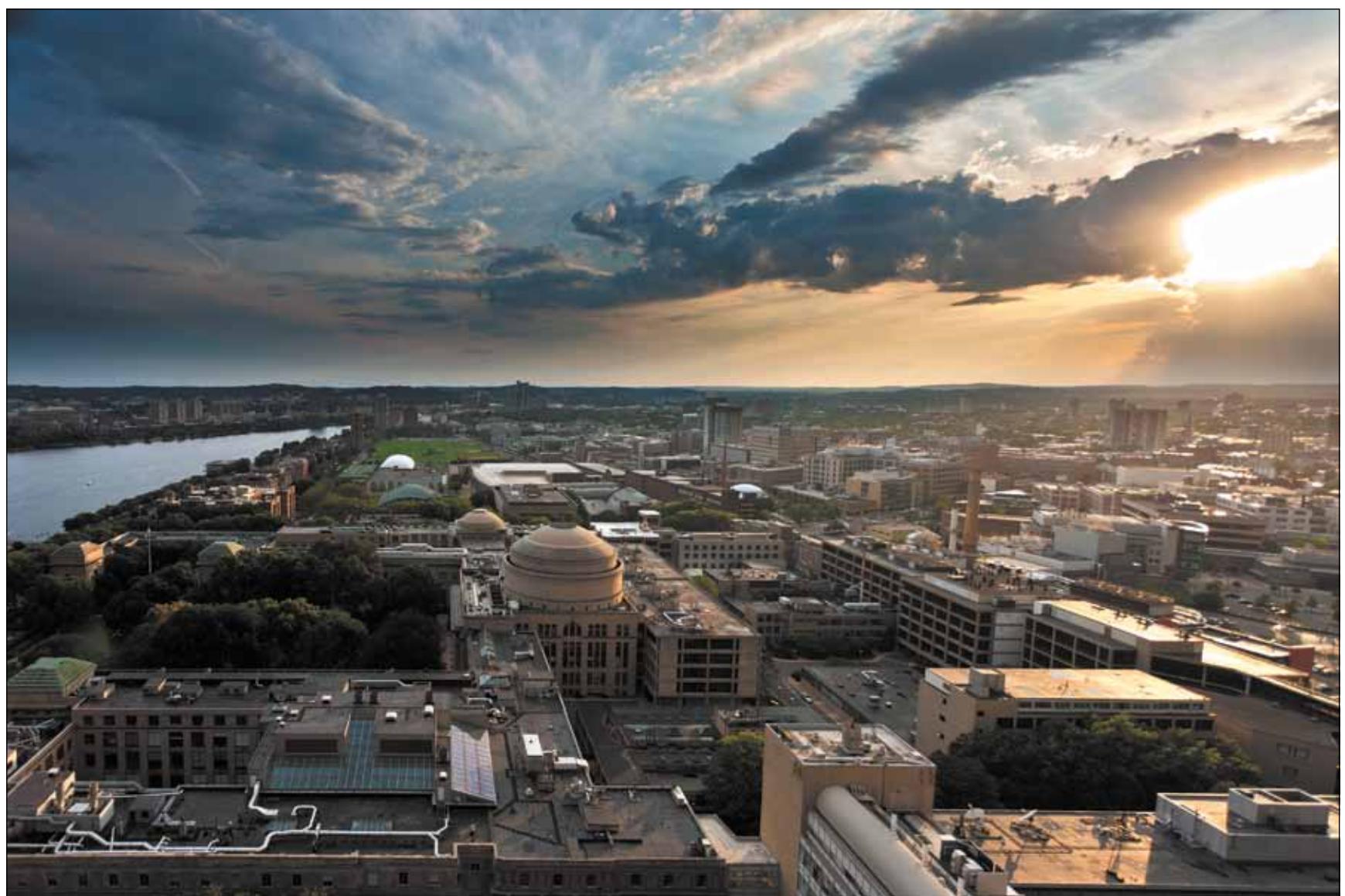
Friday, August 12, 8:00 PM

Saturday, August 13, 2:00 PM

All performances will take place in Kresge Little Theater

\$5 MIT & Wellesley students
\$10 MIT Community, other students, senior citizens, & children
\$15 General public

Institute Double Take



By Manohar Srikanth

STAFF PHOTOGRAPHER

The roof of the Green Building (Building 54) offers a unique view of MIT, Boston, and Cambridge. The evening sun beamed light through the thick clouds, lighting the dome above Lobby 10 and creating a stunning view. The mountainous, green horizon separated the sky and the city. In post-processing, a graduated neutral-density filter was applied to balance the dynamic range.

Aperture:

f/4

Exposure Time:

1/250 sec.

Sensitivity:

ISO 200

Effective Focal Length:

17 mm

VIDEO GAME REVIEW

Demon's Souls: Turning boys into men

Devilishly hard RPG pulls no punches with players

By Deena Wang

ASSOCIATE CAMPUS LIFE EDITOR

Fail to dodge an attack. Die. Walk into an "atmospheric" fire. Die. Fall off a castle wall. Die. Beat a boss, then walk into a dark tunnel and get ambushed by dogs. Die.

Demon's Souls (yes, complete with that tongue-twisting double "s") is a brutally difficult game developed by From Software and published by Sony Computer Entertainment exclusively for PlayStation 3. The game seems to have been created as a retort to people griping that modern games don't have the grueling difficulty and body count of old games.

As the opening explains, King Allant the XII made a Faustian bargain with a being known as the Old One to gain power and bring prosperity to his kingdom of Boletaria.

The game's narrative is unhampered by long cutscenes or romantic subplots; rather, the sometimes tedious but ultimately rewarding combat system is where the game truly shines.

The Old One inevitably betrays him, releasing a colorless fog and soul-stealing demons into the land. Many heroes have tried to rescue the kingdom, but all have perished. So, like a true hero, you head blindly into the same fog, either saving the kingdom or falling prey to the lust for soul power. This plot isn't groundbreaking, or even unique, but merely serves as a garnish for the inventive levels and challenging combat.



A player character attacks the Crestfallen Warrior in the Nexus, a hidden temple.

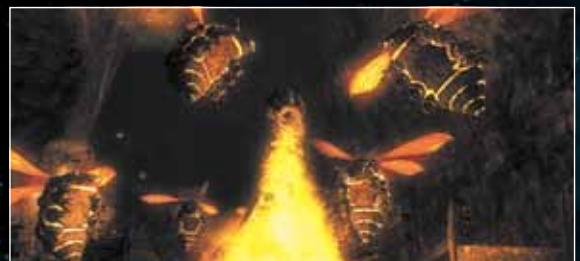
At character creation, you get to choose between ten different classes, each suiting a particular play style. I favor the Royalty class, as they start out with magical attacks and Magic Power regeneration, which suits my inexperienced combat style of sniping from a distance. Others may prefer the Knight's heavy hitting or the Thief's amazing item drop rate. No matter what class you start in, you can customize your characters by spending souls gained by killing enemies.

The game's narrative is unhampered by long cutscenes or romantic subplots; rather, the sometimes tedious but ultimately rewarding combat system is where the game truly shines. Attacking and parrying use up stamina, leaving you vulnerable while the meter regenerates. Each enemy has a unique warning sound and attack pattern, and the monsters are quite innovative, ranging from a shielded slime

with a spear to flying stingrays raining death from above. Ambushes are common, although after playing through a level many times, you memorize where all the enemies hide. Once you have mastered the combat system, you can parry and stab an enemy with panache, earning a satisfyingly bloody animation.

Of course, before you master combat, you're going to die. A lot. When you shuffle off this mortal coil with an arrow in your chest, you start back at the beginning of the level in Soul Form, which caps your health at half. That's right — dying makes the game harder. And the game constantly saves, meaning there's no turning off the game to restore yourself to life. The only way to revive yourself is to kill a boss, use a semi-rare item, or enter another player's game.

Online play is unique in that you seldom interact directly with other players. Instead, you see the ghostly images of other players in the level, and you can touch their bloodstains to see their final moments before death. They can also leave messages on the ground, both helpful and spam-full. In the rare case you do meet another player, they can be either a helpful Blue Phantom or a murderous



In the Stonefang Tunnel, a rock worm incinerates the players while flying bearbugs hover around it.

Black Phantom.

From the corpses of enemies, you can collect Hardstone, Mercurystone, Moonlightstone, Cloudstone, and a plethora of other ridiculous stones to upgrade your weapon, allowing you to plow through mobs.

Once you defeat the first boss, a tarry demon called Phalanx, the rest of the world opens up to you. *Demon's Souls* particularly excels in level design, creating atmospheric and challenging worlds. There's the Boletarian Palace, guarded by two dragons that burn players without a sense of timing; Stonefang Tunnel, a system of mines that descends to a pool of magma; the Tower of Latria, a gigantic prison full of brain-eating Mindflayers; the Shrine of Storms, guarded by skeletons; and the Valley of Defilement, full of plague and rickety wooden platforms from which to fall.

The greatest complaint I have about the game is the targeting system, used for ranged weapons and magic. It is difficult to pick out single enemies in a crowd, which will quickly drive you to profanity as your character shoots the furthest enemy and gets stabbed by the closest. In addition, locking on can cause awkward shifts in camera angle as the enemies move. Another gripe is that you can sometimes receive damage from attacks that did not appear to hit — especially annoying for one-hit-kill attacks.

The greater the challenge, the sweeter the reward. Whether it's backstabbing an enemy for massive damage or striking the finishing blow on a boss, mastering *Demon's Souls* proves your mettle as a gamer, all for only \$20. My final words of advice are "buy more items." You're going to need them.

After months, JSTOR harvesting ended in Jan. arrest

Swartz, a Harvard Ethics fellow, faces up to 35 years in prison and \$1 million in fines

Swartz, from Page 1

new computer was put to use on the same day, registered on MIT's network as a guest. When prompted, Swartz provided the name "Gary Host," which he had abridged to form the machine's client name, "ghost laptop," according to the indictment.

He put his newly-assigned MIT IP address (18.55.6.215) to use the next day, the indictment says, running a program on the laptop that downloaded JSTOR articles at a staggering rate. While the indictment describes the program as being smart enough to avoid being automatically flagged by JSTOR's systems, the strain it put on JSTOR's servers was enough to have impaired other research institutions attempting to access the materials. It wasn't long before JSTOR and MIT took notice. That evening, JSTOR blocked the IP address of the laptop, preventing it from accessing their archives.

This setback didn't deter Swartz for long, according to the indictment. The next day the "ghost laptop" was assigned a new IP address, 18.55.6.216, and continued to rapidly download JSTOR materials. JSTOR again detected the activity, and this time took a more drastic measure: noticing that the offender's two IP addresses had begun with 18.55.6, JSTOR blocked a broad range of similar MIT IP addresses. This action denied many MIT affiliates access to JSTOR for three days.

JSTOR blocked a broad range of MIT IP addresses, denying many MIT affiliates access for 3 days.

By the time JSTOR reversed its ban on that MIT IP address range on Sept. 29, MIT had taken a more targeted approach to keeping the offender off the network: blocking his laptop's MAC address. A MAC address is a sequence of characters which uniquely identifies a machine's hardware. Though it is meant to be a permanent identifier, it can be changed — a trivial operation for someone with Swartz's expertise. The Acer laptop was registered again on MIT's network less than a week later, still under the name "Gary Host" but with a slightly altered MAC address.

Grace Host

"Grace Host" first made her appearance on MIT's network on Oct. 8. That was the name, states the federal indictment, that Swartz provided when he registered a second



FRED BENENSON

machine, this time a MacBook, as a guest on the network. Together, Grace and Gary Host downloaded JSTOR articles at such an astounding pace that several of JSTOR's servers crashed.

This time, JSTOR's response was far more severe. All of MIT was denied access to the JSTOR archives for several days. When access was restored days later, the indictment suggests that Swartz used his newfound knowledge of MIT's networking infrastructure to take a new approach.

The restricted basement wiring closet

In the basement of Building 16 there is a wiring and telephony closet, known as Room 16-004t. Between November and December 2010, Aaron Swartz accessed this room and hard-wired his Acer laptop into the network, assigning himself two IP addresses. The computer was hidden under a cardboard box in the closet, and it remained there undetected for weeks. In this time it downloaded over 2 million JSTOR articles, more than 100 times the number of legitimate JSTOR downloads at MIT during that time period.

It was Jan. 4, 2011, when IS&T discovered the machine beneath the cardboard box, according to the officer report released by the Cambridge Police Department. By 10:30 a.m. an MIT police officer was on the scene, and before long he was joined by Cambridge police detective Joseph Murphy and U.S. Secret Service agent Michael Pickett. The indictment states that the laptop was running a script called "keep-grabbing.py," which was responsible for downloading the JSTOR articles. Fingerprints were lifted from the laptop and hard drive, and then the detective, the officer, and the agent left Building 16.

The laptop and hard drive re-

mained under the cardboard box in 16-004t. However, it was now accompanied by a hidden network camera, installed by IS&T.

Less than five hours later, a "white male, dark or black shoulder length wavy hair, wearing a dark coat, gray backpack, jeans with a white bicycle helmet" was observed on camera entering 16-004t, carrying what looked like a hard drive. When the man matching Swartz's description returned again on Jan. 6, 2011, he was spotted by the MIT police officer monitoring the video feed. But by the time police units arrived at 16-004t, Swartz had disappeared, along with his laptop and hard drives.

Demand Progress, which Swartz founded, is currently rallying support for Swartz with an online petition signed by over 35,000 people.

The arrest of Aaron Swartz

According to the officer report and a statement released by the MIT Student Processing Board (SIPB), Swartz didn't leave MIT's campus immediately on Jan. 6. His next stop was the fifth floor of MIT's Student Center (Building W20). "Around 1:30 p.m., a man matching Aaron Swartz's description visited the SIPB office. He left shortly afterward, around 1:50 p.m.," wrote David Wilson, SIPB Chairman, in an email to *The Tech*. "[At 4:20 p.m.], the MIT Police and representatives of IS&T came by and removed a laptop and external hard drive that had been hidden underneath a table. At the time, SIPB did not know where the machine had come from, nor was SIPB informed of the reason for its removal," Wilson said. Though Swartz was not affiliated with SIPB, the student group welcomes visitors to use their office if there are members present.

It was 2:11 p.m. on Jan. 6 when Swartz was spotted on a bicycle on Massachusetts Avenue by an MIT police officer, according to the officer's report. The report states that when he encountered Captain Albert Pierce of the MIT Police Department, Swartz jumped off his bike and ran down Lee Street, a few blocks north of City Hall in Central Square. He made it approximately 400 feet before being handcuffed and charged with breaking and entering. Though he refused to give the officers his name, a USB drive found on his person left little doubt that this was the man they were after — it contained "keepgrabbing2.py."



CONNOR KIRSCHBAUM—THE TECH

On Jan. 6, 2011, Aaron Swartz was seen exiting Room 16-004t, which he had allegedly been using to download millions of articles from JSTOR.

A timeline of Aaron Swartz's alleged activity

As described by the federal indictment

September 2010

24 Swartz purchases Acer laptop to be used for his JSTOR downloading operation.

25 Laptop begins to download JSTOR articles very rapidly. JSTOR blocks his IP address that evening.

26 Swartz starts downloading JSTOR articles with a new IP address. JSTOR responds by blocking a range of MIT IP addresses for 3 days.

27 MIT blocks the MAC address of the laptop.

29 JSTOR removes ban on MIT IP address range.

October 2010

02 "Gary Host" reappears on MIT network with a new MAC address.

08 A MacBook is registered to the MIT network with the name "Grace Host."

09 Gary and Grace Host download articles from JSTOR at a rate which crashes some JSTOR servers. MIT blocked from accessing JSTOR for several days.

January 2011

04 Swartz is spotted leaving 16-004t. IS&T discovers his equipment in the closet, installs a hidden webcam.

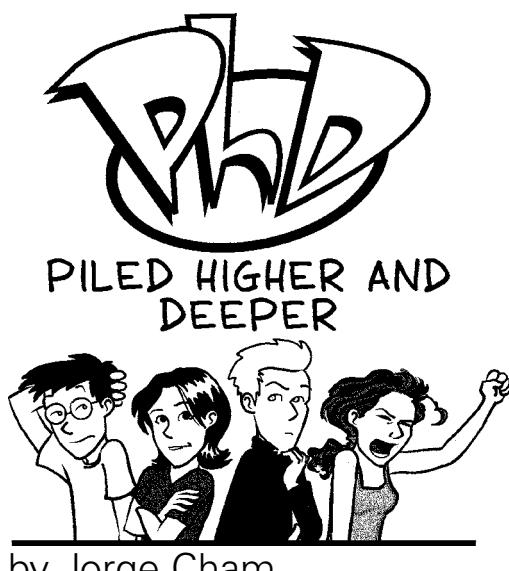
JAN 06
THE DAY OF SWARTZ'S ARREST

12:32 p.m. A
Officer monitoring network camera sees Swartz enter 16-004t. By the time officers arrive at Building 16, he was gone.

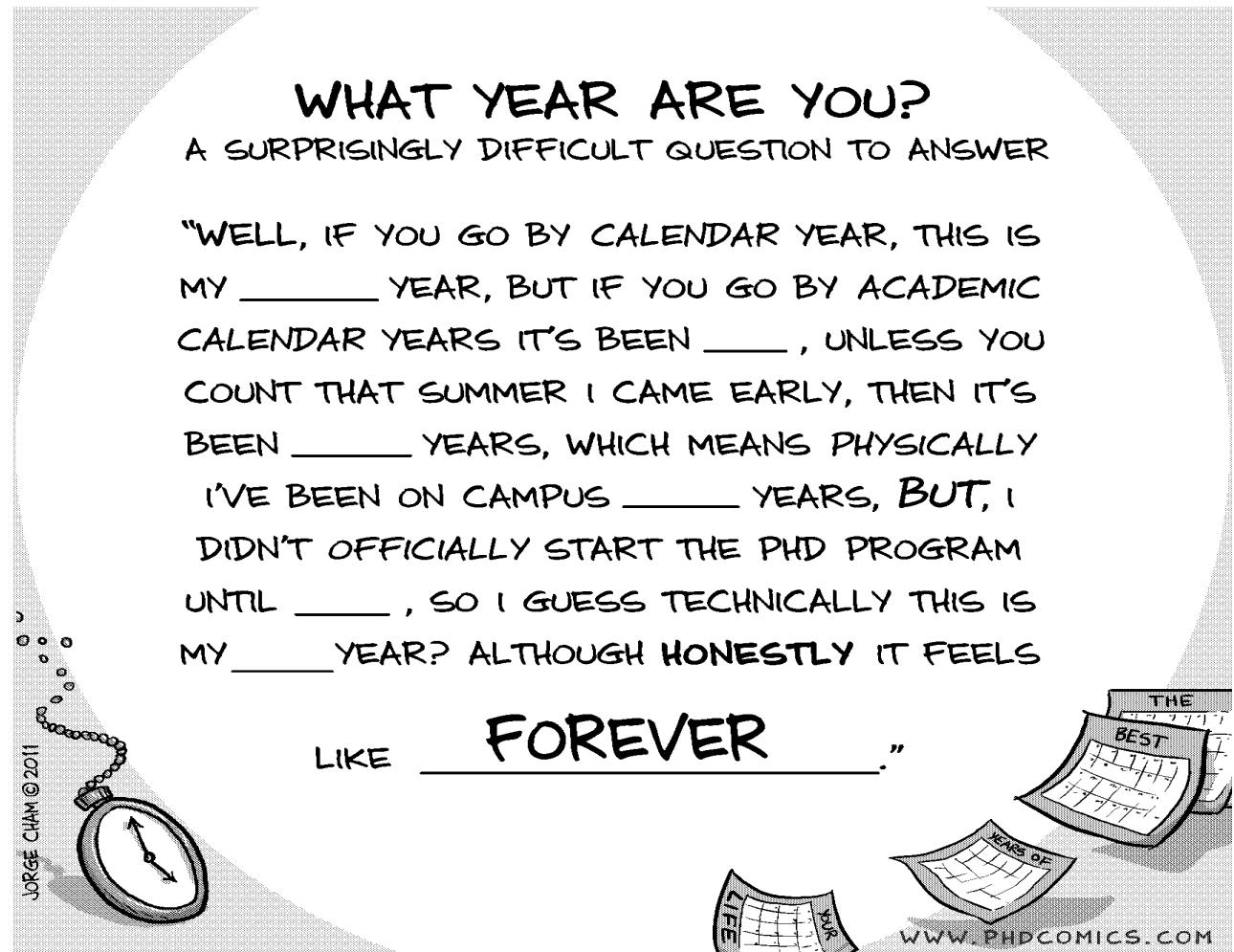
~1:30 p.m. B
Swartz arrives at SIPB, hides his laptop and hard drive.

2:11 p.m. C
Swartz arrested at 24 Lee St., after a short chase.

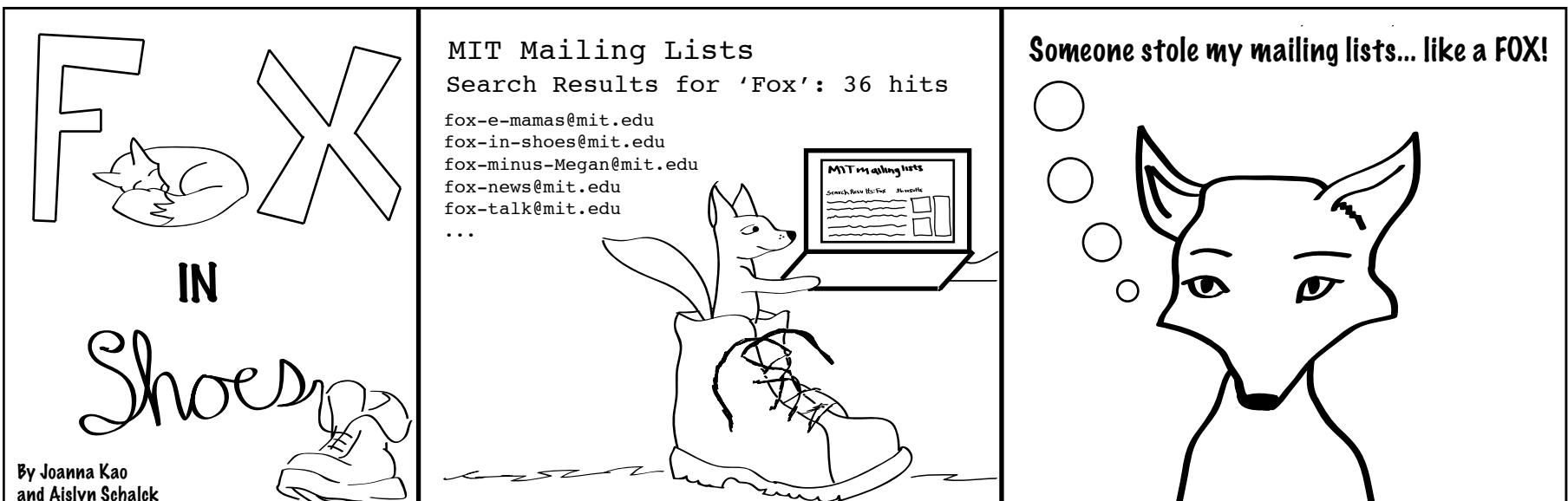




by Jorge Cham



Dilbert by Scott Adams



Crossword Puzzle

Solution, page 14

ACROSS

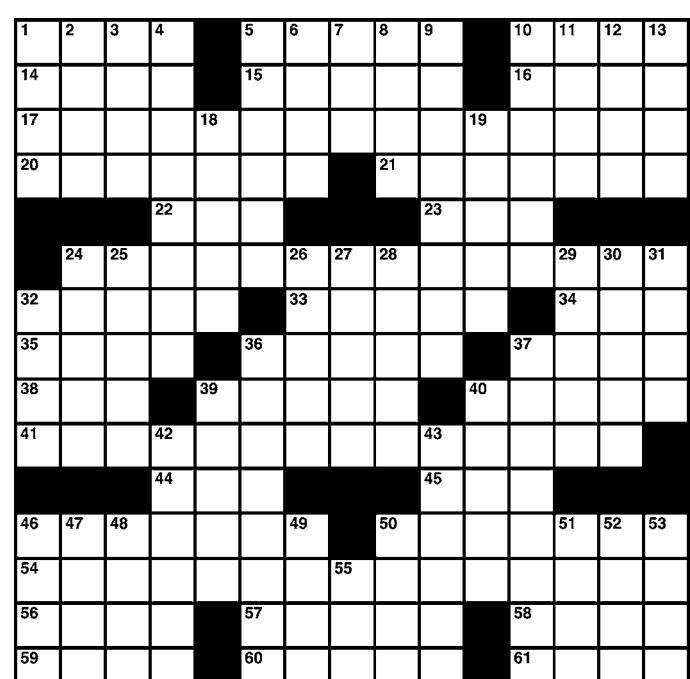
1 Droops
5 Benchwarmer
10 Dull
14 Spiritual guide
15 Pageant trophy
16 Tot's first word, often
17 Electrical worker's action
20 Stuff to capacity
21 Like the healthiest corned beef
22 White House advisory gp.
23 "Don't tase me, __!"
24 Discount retailer's action
32 Virginia, for one
33 Sits on the sill, as a pie
34 Absorb, with "up"
35 Exaggerated publicity
36 Type of servant or engineer
37 Ready for picking
38 "You __ here": mall map words
39 Arrested
40 Parson's home
41 Feudal's action

44 In the past
45 Actress MacGraw
46 Traffic jam causes
50 Toronto skyline landmark
54 Accused speeder's action
56 On a single occasion
57 Two-time U.S. Open winner
Fraser
58 Opposite of a weather
59 "The __ the limit!"
60 Freezing cold
61 Bakery offerings

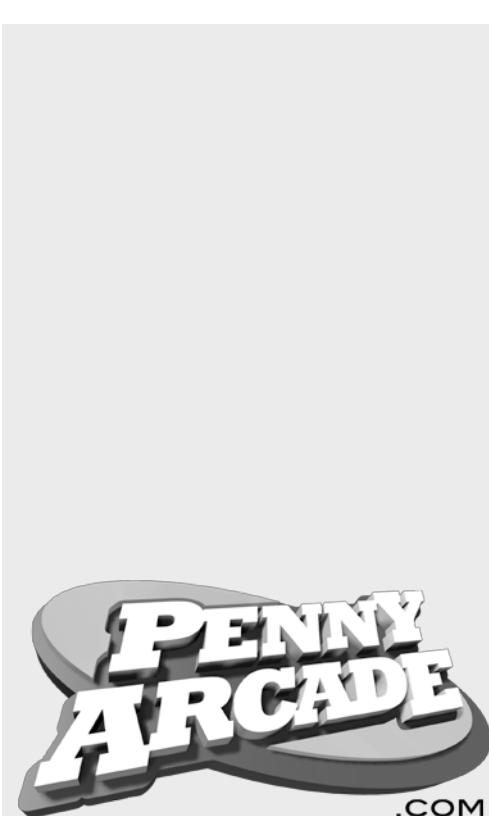
DOWN

1 Bilko and York: Abbr.
2 Subtle emanation
3 "True __": John Wayne film
4 Rotate face-up, as one's
palm
5 Pain in the side
6 Movie
7 Tabloid
8 Russia's __ Mountains
9 America's pastime
10 Key of Beethoven's Ninth

- 11 Distance divided by time
- 12 Gremlin and Pacer
- 13 Capital of Thailand?
- 18 Out of fashion
- 19 Time irregularities, in sci-fi
- 24 Prefix with foam
- 25 Boutonniere site
- 26 Cupcake topper
- 27 Spanish sweetheart
- 28 Continuing to operate
- 29 "Of Thee __"
- 30 Thicket
- 31 Olympics sword
- 32 Peacock Throne occupant
- 36 Challenging the rapids,
maybe
- 37 Police cruiser
- 39 On the money
- 40 Poly- equivalent
- 42 Sprints
- 43 Went on a tirade
- 46 Corp. money bigwigs
- 47 Place where the starts of
this puzzle's four longest
answers result in a penalty



48 Part of CIA: Abbr.	are pd.
49 Dagger of yore	52 Hard-to-find shoe width
50 Colombian cartel city	53 Numbered hwys.
51 How many employees	55 Word before Friday or pal



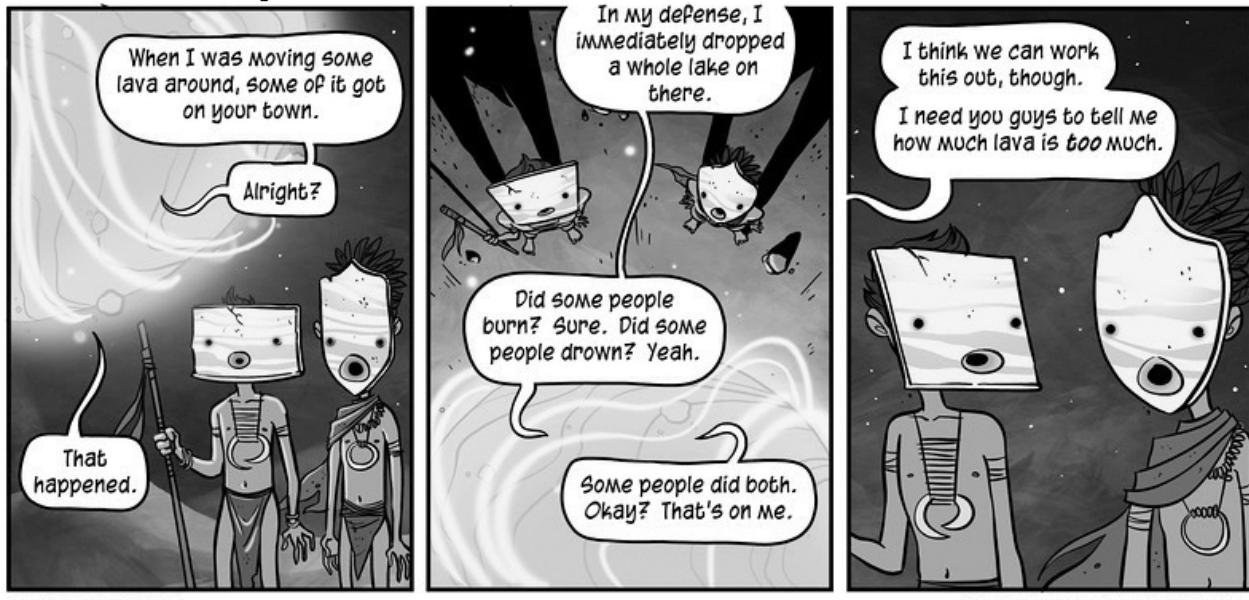
by Jerry Holkins
and Mike Krahulik

The Fire



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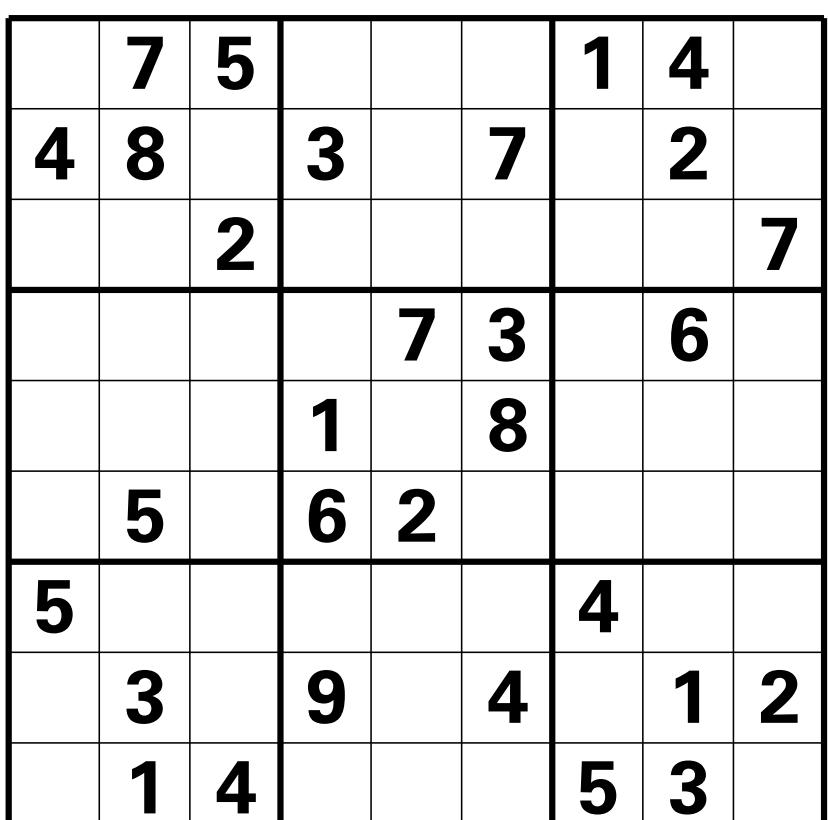
Accountability



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Sudoku

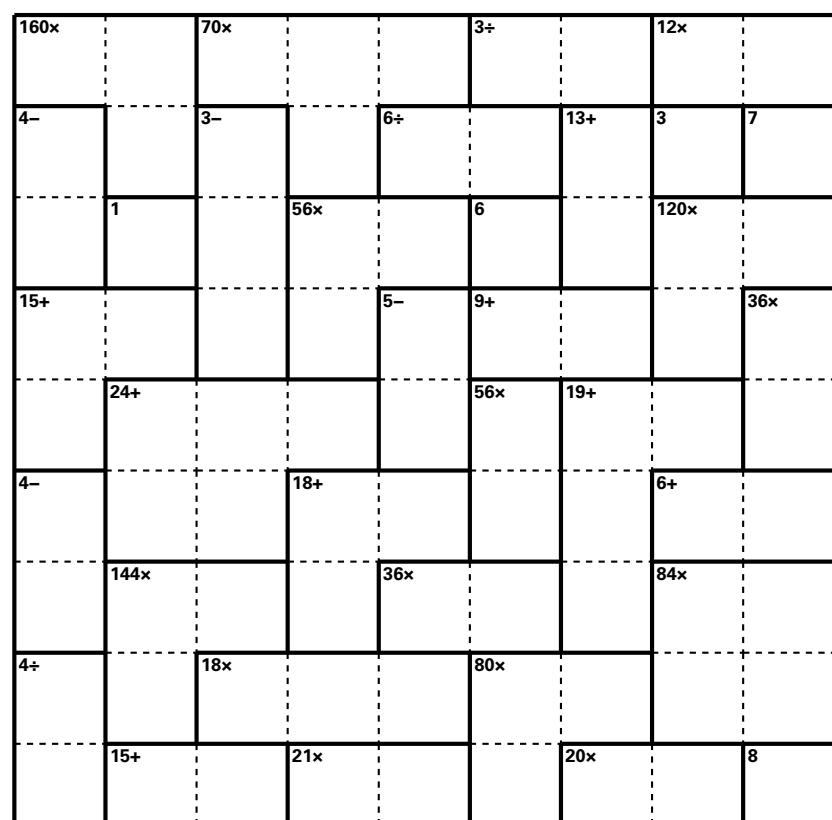
Solution, page 14



Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.

Techdoku

Solution, page 14



Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–9. Follow the mathematical operations for each box.

Police Log

The following incidents were reported by the Campus Police between March 18, 2011 and May 15, 2011. The dates below reflect the dates the incidents occurred. This information is compiled from the Campus Police's crime log. The report does not include alarms, general service calls, or incidents not reported to the dispatcher.

Nov 1, 2009 Bldg. W20 (84 Massachusetts Ave.), 9:00 a.m., Harassment.
 Sep 28, 2010 Bldg. E15 (20 Ames St.) 5:20 p.m., Sector 1 takes a report of harassing phone calls.
 Nov 3, 2010 (530 Beacon Street) 2:04 p.m., Report states several unreported bicycle thefts have occurred over the past several months. Two bicycles taken in the past several weeks.
 Jan 27, 2011 Bldg. NE49 (600 Tech Square) 12:00 p.m., Victim reports theft from accounts payable account. Victim has been contacted by a law enforcement agency.
 Mar 18 Bldg. NE49 (600 Tech Square) 2:53 p.m., Larceny of computers, dispatched Sector 4.
 Mar 21 Bldg. 14N (160 Memorial Dr.) 12:08 p.m., Laptop was stolen from office. Sector 2 responding.
 Mar 21 Bldg. 37 (70 Vassar St.) 12:30 p.m., Caller states male tried to steal his laptop from his office. Male described as: black male in early 20s about 5'10". East car and Sector 3 responding.
 Mar 21 Bldg. 36 (50 Vassar St.) 12:45 p.m., Laptop was stolen from office. West car officer takes report.
 Mar 23 Bldg. 50 (142 Memorial Dr.) 12:01 a.m., Harassing phone calls. Report taken.
 Mar 24 Bldg. 44 (51 Vassar St.) 5:00 p.m., Larceny of computer, Sector two report.
 Mar 25 Bldg. W20 (84 Massachusetts Ave.) 5:00 a.m., Student fell asleep, woke up to discover laptop and cash stolen. Sector 4 takes report.
 Mar 25 Bldg. 32 (32 Vassar St.) 1:30 p.m., Caller states laptop was just stolen. Sector 2 responding.
 Mar 28 Bldg. 36 (50 Vassar St.) 10:18 a.m., Report of a homeless person in men's room. Fabio Armelio, last known address of 68 Grant St., Medford MA arrested on default warrant.
 Mar 28 Bldg. W20 (84 Massachusetts Ave.) 12:00 p.m., Larceny of cell phone. Report taken by sector 4.
 Mar 28 Bldg. 32 (32 Vassar St.) 12:29 p.m., Report of a suspicious black male, dressed in all dark clothing is roaming around the 2nd floor area. Elijah Carpenter, 14 Hosmer St., Mattapan, MA, arrested for trespassing.
 Mar 28 Bldg. 3 (33 Massachusetts Ave) 1:00 p.m., Sector 3 takes a report of a stolen iPhone.
 Mar 28 Bldg. W34 (120 Vassar St.) 4:00 p.m., Sector 4 takes a larceny report of a cell phone.
 Mar 28 Bldg. W34 (120 Vassar St.) 4:00 p.m., Sector 4 takes a report of a stolen laptop.
 Mar 28 Bldg. W35 (100 Vassar St.) 5:00 p.m., West car officer takes a report of a stolen MIT ID.
 Mar 29 Bldg. E34 (42 Carlton St.) 10:00 a.m., Larceny of iPod. Sector one report.
 Mar 29 Bldg. E15 (20 Ames St.) 11:00 a.m., Larceny of camera lens. Sector on report.
 Mar 30 Bldg. 14 (160 Memorial Dr.) 4:30 p.m., Sector 2 takes a report of a stolen kindle.
 Mar 31 Bldg. 4 (182 Memorial Dr.) 8:15 p.m., Sector 3 takes a larceny report of a laptop.
 Apr 1 Bldg. E52 (50 Memorial Dr.) 2:00 p.m., Sector 1 takes larceny of a wallet report.
 Apr 3 Bldg. 13 (105 Rear Massachusetts Ave.) 9:00 a.m., Sector 3 takes larceny of a scooter report.
 Apr 3 Bldg. 10 (122 Memorial Dr.) 4:45 p.m., Sector 3 is dispatched to take a larceny of a laptop report.
 Apr 4 Bldg. 50 (142 Memorial Dr.) 8:34 a.m., Richard Payne, 30 Shafter St., Boston arrested by Officer Spooner for trespass on second floor after notice.
 Apr 4 Bldg. W20 (84 Massachusetts Ave.) 5:00 p.m., Caller states vandalism. Sector 4 responding.
 Apr 5 No. 6 (428 Memorial Dr.) 1:39 a.m., Larceny of item delivered. Report taken.
 Apr 5 Bldg. 4 (182 Memorial Dr.) 5:00 p.m., Vandalism to poster board. Sector 3 takes report.
 Apr 6 Bldg. 2 (182 Memorial Dr.) 12:30 p.m., Past larceny of camera and camera bag. Property found and returned to owner.
 Apr 6 No. 6 (428 Memorial Dr.) 3:36 p.m., A theft from the house report taken.

Apr 6 Bldg. 35 (127 Massachusetts Ave.) 5:00 p.m., Laptop computer stolen.
 Apr 6 Bldg. E52 (50 Memorial Dr.) 9:23 p.m., Report possible homeless person in the lobby area. David Morris, 39 Kingston Place, Boston, MA. taken into custody on a default warrant.
 Apr 9 Bldg. W84 (550 Memorial Dr.) 5:39 p.m., Fire alarm in W84 Tang Hall. West car 290 responding.
 Apr 11 Bldg. 13 (105 Rear Massachusetts Ave.) 10:40 a.m., Larceny of a laptop and when confronted returned the laptop. Male and female suspects.
 Apr 11 Bldg. 54 (21 Ames St.) 3:50 p.m., Sector 2 take a report of credit card fraud.
 Apr 12 Bldg. W84 (540 Memorial Dr.) 3:00 p.m., Laptop was stolen while waiting to be picked up by courier service. Report taken.
 Apr 13 Bldg. E52 (50 Memorial Dr.) 11:15 a.m., Sector 2 responding to E52 on larceny of laptop from coat room.
 Apr 14 Bldg. W20 (84 Massachusetts Ave.) 6:09 a.m., Larceny of laptop while sleeping. Sector 4 report taken.
 Apr 16 Bldg. 43 (57 Vassar St.) 2:24 a.m., Units dispatched to power plant for suspicious activity.
 Apr 17 Bldg. W16 (48 Massachusetts Ave.) 3:00 p.m., Malicious damage to a tent that was on Kresge Oval.
 Apr 17 Bldg. W79 (229 Vassar St.) 11:00 p.m., Malicious damage to refrigerator.
 Apr 18 Lambda Chi Alpha (99 Bay State Rd.) 5:30 p.m., Boston University PD requests assistance involving MIT students.
 Apr 19 Bldg. 54 (21 Ames St.) 9:00 a.m., Passport stolen. Sec 2 report.
 Apr 19 Bldg. E15 (20 Ames St.) 11:00 a.m., Larceny of a laptop.
 Apr 20 Bldg. 3 (33 Massachusetts Ave.) 12:58 a.m., Larceny of cases of paper.
 Apr 20 Bldg. NW12 (138 Albany St.) 11:29 a.m. Bicycle was stolen. West car officer takes report.
 Apr 20 Bldg. 4 (182 Memorial Dr.) 11:30 a.m., Vandalism to bulletin board.
 Apr 20 Bldg. W34 (120 Vassar St.) 4:00 p.m., Larceny. Report of ID stolen.
 Apr 21 Bldg. 32 (32 Vassar St.) 8:30 a.m., Larceny of money. Sector 2 officer take report.
 Apr 22 Bldg. W20 (84 Massachusetts Ave.) 4:56 a.m., Breaking and entering of a food establishment. Erica Monroig, homeless, arrested at 84 Massachusetts Ave. for breaking and entering.
 Apr 22 Bldg. E53 (30 Wadsworth St.) 12:34 p.m., Annoying emails and calls. Dispatched sector 1 takes report.
 Apr 22 Bldg. 37 (70 Vassar St.) 6:00 p.m., Report of a burglary. Sector 3 takes a report, several items stolen.
 Apr 22 Bldg. W20 (84 Massachusetts Ave.) 11:00 p.m., West car responds to station for a report of a stolen bike from W20.
 Apr 23 Bldg. 26 (60 Vassar St.) 9:41 a.m., Sector 3 off with suspicious male, Fabio Armelio arrested for trespass.
 Apr 23 Bldg. W20 (84 Massachusetts Ave.) 1:26 p.m., Larceny of back pack with a computer, dispatched west car to take report.
 Apr 23 Kappa Sigma (407 Memorial Dr.) 10:41 p.m., Suspicious white male in his bedroom. Another resident of the fraternity chased the suspect out of the building in the direction of Memorial Drive. The suspect is located on Massachusetts Ave. by W1 and is known to our department. The suspect is placed under arrest. Sean Driscoll.
 Apr 25 Bldg. E51 (70 Memorial Dr.) 7:55 a.m., Larceny of laptop. East car officer takes report.
 Apr 25 Bldg. 32 (32 Vassar St.) 10:39 a.m., Caller states there is a strange man going in and out of the women's room on second floor.
 Apr 26 Bldg. W59 (201 Vassar St.) 4:00 p.m., White male with red hair possibly drunk harassing people. Given trespass notice by responding units.
 Apr 27 Bldg. NW10 (143 Albany St.) 12:30 a.m., Report of suspicious activity. West car officer takes report.
 Apr 27 Bldg. W34 (120 Vassar St.) 2:21 a.m., Officers off with two subjects by W34. Mohamad Noor,
 Apr 27 homeless & Joseph Gilden, 36 Clay St., Cambridge, Mass., arrested at 120 Vassar St. for receiving stolen property by Sector 4.
 Apr 27 Bldg. 32 (32 Vassar St.) 8:30 a.m., Report of a domestic fight outside Stata. Responding units assist the victim. Suspect taken into custody by other police agency.
 Apr 27 Bldg. NE49 (600 Tech Square #4122) 3:45 p.m., Report of a stolen Kindle. Dispatched east car, report taken.
 Apr 29 Bldg. W89 (291 Vassar St.) 11:00 a.m., Person report threats from a delivery person. Dispatched west car.
 Apr 29 Bldg. 12 (60 Rear Vassar St.) 2:03 p.m., Tools stolen from hallway. Sector 4 takes report.
 Apr 30 Bldg. 10 (122 Memorial Dr.) 9:40 a.m., Arrest of Robert Cooper, 240 Albany St., Cambridge MA; Joseph Gilden, 36 Clay St., Cambridge MA. Arrest on outstanding warrant.
 Apr 30 Bldg. E62 (100 Main St.) 11:30 a.m., Report that a U.S. Patent, which was on display at E62, was stolen. Sector 1 takes report.
 Apr 30 Bldg. W61 (450 Memorial Dr.) 3:56 p.m., Vehicle broken into and GPS stolen. Dispatched west car to take report.
 May 1 Bldg. W7 (362 Memorial Dr.) 3:26 a.m., Student reports unknown person in the area refusing to leave and requesting assistance.
 May 1 Bldg. NW61 (282 Massachusetts Ave.) 10:01 a.m., Report of suspect looking into front of Random Hall, possibly to steal something. East car responds.
 May 2 Bldg. E19 (400 Main St.) 3:00 p.m., Larceny of tools. Report taken.
 May 3 Bldg. 56 (21 Ames St.) 4:00 p.m., Laptop was stolen, report taken.
 May 5 Bldg. N52 (265 Massachusetts Ave.) 8:30 a.m., Room was broken into report taken.
 May 5 Bldg. 68 (31 Ames St.) 7:17 p.m., Computer stolen from office area report taken.
 May 6 Bldg. 7 (77 Massachusetts Ave.) 11:00 a.m., Larceny of MIT ID.
 May 6 Bldg. 4 (182 Memorial Dr.) 3:00 p.m., Report of vandalism to a bulletin board.
 May 6 Bldg. N42 (211 Massachusetts Ave.) 4:30 p.m., Larceny of property. Report taken by east car officer.
 May 7 Bldg. E15 (20 Ames St.) 12:00 a.m., Malicious destruction of property.
 May 7 Bldg. N52 (265 Massachusetts Ave.) 10:00 a.m., 290 Reports suspicious activity on the top floors of the building.
 May 8 Bldg. W7 (362 Memorial Dr.) 2:41 a.m., Caller reports an odor in second floor area of Baker House making people sick. Fire alarm pulled. CED, EMS, and Facilities in route along with MIT Police units.
 May 9 Bldg. NW21 (190 Albany St.) 6:00 p.m., Reports 2 homeless people fighting in the rear of the garage fight broken up upon arrival.
 May 10 Bldg. E14 (75 Amherst St.) 3:00 p.m., Larceny of speakers. Sector one takes report.
 May 10 Bldg. W71 (500 Memorial Dr.) 4:30 p.m., Party reports past simple assault. West car officer taking report.
 May 11 Bldg. 2 (182 Memorial Dr.) 6:27 a.m., Report of a possible homeless male in area; units respond. Trespass warning issued.
 May 12 Bldg. W20 (84 Massachusetts Ave.) 6:11 a.m., Sector 4 checks W20 (all floors) and issues three trespass warnings.
 May 12 Bldg. 7 (77 Massachusetts Ave.) 6:52 a.m., Sector 3 checks on a person sleeping, homeless. Issued trespass warning.
 May 13 Bldg. 10 (122 Memorial Dr.) 3:38 a.m., Homeless person issued trespass warning.
 May 13 Bldg. 16 (21 Ames St.) 2:52 p.m., Stolen irrigation material. Sector 3 takes report.
 May 15 Bldg. W7 (291 Vassar St.) 2:04 p.m., Larceny outside of Baker House: a microwave and small fridge. West car dispatched for report.
 May 15 Bldg. W61 (450 Memorial Dr.) 5:00 p.m., Bicycle was stolen from outside MacGregor House. Sector 5 takes report.

COMPILED BY JOSEPH MAURER AND JOHN A. HAWKINSON.

MIT Club of Boston draws summertime crowd

MIT's Class of 2015 chats about hopes and goals for their first year at the Institute

Barbecue, from Page 1

the barbecue were on campus to participate in the Undergraduate Research Opportunities Program (UROP), many of the incoming freshmen had been taking the summer off from serious work. Attendees said that they were spending their time reading, traveling, packing, and preparing for the fall semester.

Daniel Y. Zhang '15 of Newton, Mass., said that he was excited about meeting new people in the

fall, noting that he looked forward to meeting students with different backgrounds and interesting ideas. Although unsure of his major, Zhang said he is considering his options for fulfilling the General Institute Requirements and is trying to decide which advanced standing exams he will take. Like many of the other freshmen at the event, Zhang wondered what technology-enabled active learning (TEAL) is — and why it is so hard to get a basic description of the teaching style without a good

amount of opinion mixed into the explanation.

Like Zhang, Jennifer J. Thornton '15 looks forward to "exploring new stuff" once she arrives on campus, beginning with her freshmen pre-orientation program, Discover Mechanical Engineering. Thornton said she was excited about living in Simmons this fall and is planning to major in biological engineering.

Though there were relatively few members of the Class of 2015 gathered around a table on the

sunny patio, a significant portion of the dorms was represented. Zhang said that he will be living in Next House. Troy P. Welton '15, who is planning on majoring in physics and math, said that he has been assigned to Spanish House and has already begun corresponding with residents. John B. Thomas '15, who will be living in Baker, said that he is happy to have been assigned to his first choice.

Tiffany J. Amariuta '15, who plans to declare Course 10B, is looking forward to making new

friends in McCormick. She said she is excited for orientation and will be volunteering for CityDays. Like many others, Amariuta is hoping to get a UROP once the year gets started. Learning new sports through P.E. classes also ranks high on her list — especially learning how to ice skate.

The barbecue was just one of the many events held for incoming freshmen by MIT clubs across the nation. To look for events in your area, check with your local MIT club.

Massachusetts lottery woes

Savvy players with capital play smart, win big

By Andrea Estes
and Scott Allen
THE BOSTON GLOBE

SUNDERLAND — Billy's Beer and Wine sold exactly \$47 worth of lottery tickets the day before Marjorie Selbee arrived, just another sleepy day for the liquor store in this tiny Western Massachusetts town. But from the moment the 70-something woman from Michigan entered the store early July 12, Billy's wasn't sleepy anymore.

Over the next three days, Selbee bought \$307,000 worth of \$2 tickets for a relatively obscure game called Cash WinFall, tying up the machine that spits out the pink tickets for hours at a time. Down the road at Jerry's Place — a coffee shop in South Deerfield — Selbee's husband, Gerald, was also spending \$307,000 on Cash WinFall. Together, the couple bought more than 300,000 tickets for a game whose biggest prize — about \$2 million — has been claimed exactly once in the game's seven-year history.

But the Selbees, who run a gambling company called GS Investment Strategies, know a secret about the Massachusetts State Lottery: For a few days about every three months, Cash WinFall may be the most reliably lucrative lottery game in the country. Because of a quirk in the rules, when the jackpot reaches roughly \$2 million and no one wins, payoffs for smaller prizes swell dramatically, which statisticians say practically assures a profit to anyone who buys at least \$100,000 worth of tickets.

During these brief periods — "rolldown weeks" in gambling parlance — a tiny group of savvy bettors — among them highly trained computer scientists from MIT and Northeastern University — virtually take over the game. Just three groups, including the Selbees, claimed 1,105 of the 1,605 winning Cash WinFall tickets statewide after the rolldown week in May, according to lottery records. They also appear to have purchased about half the tickets, based on reports from the stores that the top gamblers frequent most.

The Selbees have already claimed nearly \$1 million in prize money this year, entirely in tickets valued at \$802 to \$24,821.

"Cash WinFall isn't being played as a game of chance. Some smart people have figured out how to get rich while everyone else funds their winnings," said Mohan Srivastava '79, an MIT-educated statistician who gained fame in gambling circles when he found a flaw in a Canadian scratch ticket game that allowed him to pick the winners more than 90 percent of the time.

It is hard to say precisely how much each gambler has won because they have a year to claim prizes and the lottery does not track winning tickets of less than \$600. But the Selbees have already claimed nearly \$1 million in prize money this year, entirely in tickets valued at \$802 to \$24,821. Their final haul will undoubtedly be considerably larger.

Srivastava calculated that a gambler who bought 200,000 Cash WinFall tickets during four rolldown weeks in a year would win enough to cover the \$1.6 million investment and earn a profit of \$240,000 to \$1.4 million — without ever winning the jackpot. Srivastava's calculations suggest that the top five groups and individuals

playing Cash WinFall collectively win back the cost of their tickets plus \$1 million to \$6 million in profits each year from about 12 days of gambling.

On the other 350-plus days of the year, less-sophisticated Cash WinFall players generally lose money, their losses building up the multimillion dollar pool that is ultimately paid out during the rolldowns.

The high-stakes players' dominance of Cash WinFall is putting an uncomfortable spotlight on the state lottery, which has known about the phenomenon for years but only recently started to police the game under new state Treasurer Steven Grossman.

Cash WinFall is so lucrative to stores that sell the tickets — which get a commission equal to 5 percent of the sales — that some are tempted to break the rules to accommodate the high rollers' needs. A *Globe* reporter saw Marjorie Selbee behind the counter at Billy's, apparently operating the Cash WinFall machine in violation of a lottery rule that store employees alone can work the ticket dispenser.

Within days, the lottery suspended ticket-selling privileges at Billy's, Jerry's, and five other stores after agency inspectors discovered violations, such as printing out Cash WinFall tickets for bettors who were not there. However, lottery officials stressed that stores did not tamper with the machines that generate the tickets or otherwise aid the gamblers.

"It is very important to note that their actions in no way compromised the operation or integrity of the game," said lottery officials in a statement.

More broadly, some question why the state would sponsor a game that is vulnerable to betting tactics that funnel most of the prize money to just a few.

"It's a private lottery for skilled people," said Secretary of State William Galvin, who has been scrutinizing lottery games since he ran for treasurer 20 years ago. "The question is why?"

But lottery officials say the game is successful, generating a respectable \$11.8 million in profits in 2011 even though the agency sometimes pays out more money than it takes in during the rolldown weeks. Lottery officials say they more than offset the cost of rolldown weeks over the rest of the year.

"It's a niche game for a different audience," explained Paul Sternburg, the lottery's executive director. "You want to bring in as many players as possible. Some people chase a huge jackpot. Others are looking at odds."

One thing is certain, however: The players who invest big money in Cash WinFall do not want to talk about it, refusing to discuss the game or explain the secret of their success. Mark Fettig of Tennessee, one of the top 10 winners during the May rolldown week, urged the *Globe* not to write a story at all, saying "it would be immoral" to attract more people to Cash WinFall and potentially dilute the winnings of current players.

Savvy players Yuran Lu '05, a 28-year-old MIT graduate who majored in electrical engineering, computer science, and math, seems far removed from the blue-collar image of a lottery player. This year's second-leading Cash WinFall winner — his Random Strategies Investments has cashed in more than 500 winning tickets worth a total of \$765,168 so far — Lu was on a five-week vacation in Europe during the rolldown week in July, so he said other members of his group had to buy tickets for him.

A native of China who moved

to northern Maine as a child, Lu had a "distinguished career even by MIT standards," according to an April 15, 2005, *Tech* article. His academic record included math, computing, and engineering contest victories, while his whimsically named "Kamikaze Puppy" placed second in a robot competition.

Lu also developed a taste for high-tech pranks, *The Tech* reported: He once collected more than 600 student passwords to the MIT computer system and sent them to the administration just to show them how easy it was.

The Selbees, by contrast, formerly ran a corner store in Evart, Mich., one of the few states that has offered a game similar to Cash WinFall. That game was discontinued in 2004, the same year the Selbees formed their gambling company. The next year, the couple began making treks to Massachusetts to play Cash WinFall, according to lottery records.

Sophisticated players do not actually want the jackpot to be paid out — unless it is going to them.

The couple would not speak to a reporter who visited the stores July 12 when Marjorie Selbee was upset to learn that her Cash WinFall earnings were public information.

Lu initially agreed to talk about his gambling company, formed with MIT friends last year, but he subsequently did not return phone calls. However, available information suggests he approached Cash WinFall like a research project, asking the lottery for information about the other big players last year and using a social media website in December to ask questions about how "to determine the optimal time to buy a lottery ticket."

Secrets of the game

And winning at Cash WinFall, it turns out, is all about timing. On one level, the game is simple: If the numbers on six randomly selected balls match the six on your ticket, you win the jackpot. The game also doles out lesser prizes for matching five balls down to as few as two (free ticket). Since its creation in 2004, the game has not exactly caught the gambling public's imagination: Only one person has ever won the 1-in-9.36 million odds jackpot (one of the big-money players), and sales are stagnant, accounting for only about 1 percent of lottery revenues.

But Lu, like the Selbees and a few others, focused on a feature of the game that is extremely rare in the United States, according to gambling authorities contacted by the *Globe*. The jackpot grows gradually over time from a low of \$500,000 to a limit of \$2 million to \$2.5 million; when the limit is reached and no one claims the big prize, the top prize money is poured into the smaller prizes — or "rolled down" — raising the odds of a significant payout.

During normal weeks, picking five out of six numbers correctly will generate a \$4,000 prize, but the prize rises to \$20,000 to \$40,000 during rolldowns, depending on how many winning tickets are cashed. Fewer winning tickets translates to larger payouts: During Cash WinFall's first year, the prize for picking five numbers correctly once exceeded \$100,000.

Likewise, the prize for picking four of six numbers swells from \$150 to \$800 or even \$1,000, while the prize for picking three num-

New Mass. lottery restrictions in place

Regulations surround high-stakes Cash WinFall players

By Andrea Estes
THE BOSTON GLOBE

State Treasurer Steven Grossman severely restricted yesterday the number of Cash WinFall lottery tickets any store can sell in a day, closing a loophole that has allowed a handful of high-stakes gamblers to win most of the prizes.

Just three gambling companies collected 1,105 of the 1,605 Cash WinFall prizes statewide after a May drawing, each following a strategy that involved buying hundreds of thousands of dollars worth of the \$2 tickets at selected stores over a few days.

Under the new rules, no store will be allowed to sell more than \$5,000 worth of Cash WinFall tickets in a single day, making it much harder for the gamblers to continue their high-volume purchases.

Grossman also said that Cash WinFall, which has seen declining sales since it was introduced in 2004, will be phased out next spring as part of the normal rotation of games.

"We want to do everything we can to make sure the integrity of the lottery is not questioned in any way, shape, or form," he said, adding that restricting sales at each store will level the playing field among players.

Grossman was reacting to a Sunday *Globe* story that said that sophisticated gamblers had found a quirk in Cash WinFall's rules that virtually guarantees they will make a large profit if they buy more than \$100,000 worth of tickets at certain times of the year when prizes are four to 10 times larger than normal.

Those times, called "rolldown weeks," take place when the Cash WinFall jackpot grows to roughly \$2 million and no ticket wins the jackpot by matching six randomly chosen numbers. The jackpot money is then distributed among the secondary prize-winning tickets, increasing the payoff. For instance, the payoff for matching five numbers rises from \$4,000 to a range from \$17,500 to as much as \$134,767, depending on how many winning tickets are sold.

Several groups — two of them led by highly trained computer scientists from MIT and Northeastern University — formed gambling companies and began pouring hundreds of thousands of dollars into Cash WinFall, a phenomenon lottery officials first noticed in 2005.

The top five groups and indi-

viduals playing Cash WinFall collectively win back the cost of their tickets plus \$1 million to \$6 million in profits each year during rolldowns, without ever winning the jackpot, according to Mohan Srivastava '79, a Canadian statistician who found a flaw in a Canadian instant game that allowed him to detect winning tickets without scratching them.

News of the quirk in Cash WinFall brought immediate accusations that the game gave an unfair advantage to well-financed players. Overall, the lottery makes a profit from the game, but lottery officials admitted the big payouts made during rolldown weeks are, in effect, subsidized by people who bet at other times when the payoff for winning is far less favorable.

"I've suspected right along that this type of betting was occurring," said Cash Winfall player Peter McPhail, who has urged the Lottery to change the game's rules. "Trust me, small-time players always need divine intervention!"

After a day of defending Cash WinFall to the media, Grossman intervened late yesterday afternoon by making it harder for the big-time gamblers to obtain enough tickets to virtually guarantee a profit.

Grossman made it harder for the big-time gamblers to obtain enough tickets to virtually guarantee a profit.

For several days leading up to a rolldown, the bettors monopolize lottery machines at about a dozen stores, buying as many tickets as time allows. In the tiny towns of Sunderland and South Deerfield, Gerald and Marjorie Selbee of Evart, Mich., who run GS Investment Strategies, bought more than \$600,000 in tickets in three days in July.

In all, the lottery said that six stores statewide received permission to sell at least \$100,000 worth of Cash WinFall tickets daily during the July rolldown while another five got permission to sell \$36,000 to \$75,000.

Under Grossman's new rules, big-time gamblers would have a tough time maintaining their current level of play. The Selbees, for

Restrictions, Page 14

The Science Wars

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NIH nets victory in stem cell battle, research continues

Plaintiff and former MIT professor James Sherley dealt serious blow in fight against hESC funding

Stem cells, from Page 1

court several times since it was first filed almost two years ago on Aug. 19, 2009. Sherley and Deisher sued the NIH, but there were several additional co-plaintiffs: including Nightlight Christian Adoptions ("individually and as next friend for Plaintiff Embryos"), Christian Medical Association, and, in a bizarre legal maneuver, "embryos" themselves.

"This Court has become a grudging partner in a bout of 'linguistic jujitsu'"

Judge Royce C. Lamberth
U.S. DISTRICT COURT FOR DISTRICT OF COLUMBIA

Sherley is a former MIT professor who now works at the Boston Biomedical Institute in Watertown. He was denied tenure by MIT by the Department of Biomedical Engineering in December 2004, engaged in a dispute process with the Institute in 2005 and 2006, and then threatened and executed a hunger strike in 2007 before leaving MIT. Sherley, who is black, alleged racial discrimination on the part of his department and senior Institute officials.

Deisher is an adult stem researcher based in Seattle, Wash.

When the case was first filed, it was not considered a serious impediment to ongoing stem cell research. That came much later.

The case was initially dismissed

on Oct. 27, 2009. Lamberth ruled that the plaintiffs lacked standing — that they were not actually harmed by the government's funding of embryonic stem cell research, so they lacked the right to sue. Sherley, Deisher, and the others appealed to the United States Court of Appeals for the District of Columbia, and there it sat, quietly, for half a year. Most scientists who had paid some attention to the case forgot about it, and apparently so did the NIH. It was utterly unprepared for what happened next.

On June 25, 2010, the Appeals Court partially reversed Lamberth's dismissal. It ruled that "the Doctors" — Sherley and Deisher — indeed did have standing, though the other plaintiffs (including the adoption agency and the embryos themselves) did not. The court found that Sherley and Deisher faced increased competition for research funding — despite the fact that Deisher had not then and still has not applied for NIH funding. The case was remanded back to Lamberth's court for further consideration.

But no one seemed to pay attention. Because of a court clerical error, notice of the appeal's court decision did not appear in the district court's docket until Aug. 19, 2010. This meant anyone who was following the case only at the district level did not know of the appeal's court's decision — though anyone paying attention to the appeal's court's docket would have seen it.

Research funding halted

On Aug. 23, 2010, just over a

year after the case was first filed, Lamberth issued a preliminary injunction in favor of Sherley and Deisher. Lamberth said that Sherley and Deisher were likely to succeed in the case, that they would "suffer irreparable injury" if hESC research were allowed to continue, that the balance of harms favored them, and that the public interest weighed in favor of a preliminary injunction. His decision rested on the belief that Dickey-Wicker was unambiguous, and that "research" using an existing embryonic stem cell line was the same "research" in which that embryo was destroyed, though the destruction could have taken place years prior by other researchers.

The preliminary injunction enjoined the NIH from funding hESC research and caused a huge stir. The NIH was apparently entirely unprepared for this possibility, and stem cell researchers were blindsided. Most had not even been aware of the Sherley case, and those that had did not know it was still alive.

The preliminary injunction caused major disruption. Researchers were uncertain whether they could continue to keep living stem cells in their labs and whether they could continue to do their work. The NIH issued guidelines saying that existing research could continue, though it wasn't even clear their interpretation of the injunction was correct.

Then the court situation got complicated.

The NIH scrambled and requested an emergency stay — a request to suspend the order and permit hESC research to continue

— on Aug. 31. Lamberth denied it on Sept. 7.

The NIH took their emergency stay request to the appeals court on Sept. 8. The appeals court granted a temporary "administrative" stay for the purpose of considering whether a stay was appropriate. They granted it the next day, on Sept. 9, so the NIH-funded hESC research was allowed to resume.

But at this point, the grant pipeline had already been disrupted. The NIH had stopped approving grants for new stem cell research because of the preliminary injunction. The landscape was quite uncertain. No one knew how the appeals court would rule, or ultimately how the district court would rule. Labs facing uncertain funding situations were ill-equipped to make decisions about hiring or keeping staff.

On Sept. 28, the appeals court ruled that a stay was appropriate. Their administrative stay became a normal stay for the duration of the NIH's appeal.

The case could well be appealed back to the appeals court and then to the Supreme Court.

On April 29, 2011, the appeals court finally ruled: it dismissed the preliminary injunction against the NIH by a 2-1 vote. The appeals court wrote that the word "research" in the Dickey-Wicker amendment was ambiguous, and that the NIH could choose how to

interpret the word. Specifically, that the NIH could choose to interpret that current embryonic stem cell research was not the same "research" in which the embryos were destroyed.

With the preliminary injunction dismissed, the case went back to Lamberth in the district court to decide. Both sides filed briefs on the implications of the appeals court decision, but a fatal blow had been dealt to Sherley and Deisher's argument. The ambiguity of the word "research" was the crux of the decision favoring them and Lamberth's belief that they were likely to succeed. Without that, their case fell apart.

Last week Wednesday, July 27, 2011, Lamberth ruled in favor of the NIH. Lamberth wrote that his court was bound by the appeals court's determination, and acknowledged a criticism from the dissenting opinion in from the appeals court: "While it may be true that by following the Court of Appeals' conclusion as to the ambiguity of 'research,' this Court has become a grudging partner in a bout of 'linguistic jujitsu,' ... such is life for an antepenultimate court."

The case could well be appealed back to the appeals court and then to the Supreme Court. In May, Samuel B. Casey, one of Sherley's lawyers, said that no matter who won the case, he expected the case to reach the Supreme Court. In the interim, though, stem cell research can probably continue unabated. Neither the appeals court nor the Supreme Court is likely to issue another preliminary injunction barring stem cell research.

Mass. lottery has unique game

Rollover allows large winnings from many small prizes

Prizes, from Page 13

bers jumps from \$5 to \$26 or more. As a result, sophisticated players do not actually want the jackpot to be paid out — unless it is going to them. The odds of winning the lower prizes are so good that they can gradually win a fortune just by betting hundreds of thousands of dollars every rollover week.

Two math experts contacted by the *Globe* stressed that it is crucial for bettors to buy enough tickets so that they minimize the risk that, by random chance, they purchased mainly losing tickets.

Mark A. Kon PhD '79, a professor of math and statistics at Boston University, calculated that a bettor buying even \$10,000 worth of tickets would run a significant risk of losing more than they won during the July rollover week. But someone who invested \$100,000 in Cash WinFall tickets had a 72 percent chance of winning. Bettors like the Selbees, who spent at least \$500,000 on the game, had almost no risk of losing money, Kon said.

Only once in the history of Cash WinFall did Kon's calculations not apply. During a rollover in 2008, Wenxu Tong, who earned a doctorate at Northeastern and now works in California, won the nearly \$2.5 million jackpot, leaving

no jackpot to spread among the lesser prizes.

Today, he is the general partner in a company called Tong's Fortunelot Limited Partnership, which has cashed in the third-most winning tickets this year. A lottery agent who sells tickets to the group said Tong's Fortunelot invested \$200,000 at his store in May and won \$280,000.

Of course, the other big winners are the stores that sell these huge blocs of tickets: Marjorie Selbee's three-day Cash WinFall buying binge earned Paul Mardas, the owner of Billy's in Sunderland, a commission of about \$18,000.

Yet Mardas repeatedly said "I don't know" when asked about Selbee and her company, even though Selbee, declining to identify herself, sat next to him. The owner of Jerry's in South Deerfield, which received a similar commission for selling tickets to Selbee's husband, also declined to talk, saying only that he had met Gerald Selbee once or twice.

"It's all above board," said Jerry Dagrosa, who turned off the Cash WinFall machine when a reporter entered, even though Gerald Selbee was waiting to place tens of thousands of dollars in bets.

On the eve of the July rollover, lottery officials sent a letter to stores that sell large volumes of

Cash WinFall tickets warning that they cannot bend betting rules to accommodate big spenders. But state inspectors still found violations at seven of the 13 stores that sell the most tickets, including clerks who processed tickets for bettors who were not present, stores that let the customer operate the Cash WinFall machine, and stores that opened during off hours solely to allow customers to buy tickets.

The lottery temporarily suspended those seven from selling tickets, and all will be barred from selling more than \$5,000 worth of Cash WinFall tickets a day in the future. Of the seven stores, only Billy's and Jerry's remain under suspension.

Lottery officials say they have no reason to apologize for Cash WinFall, created under former treasurer Timothy Cahill after a lottery player survey showed people wanted a game that had better odds of winning.

But lottery officials left uncertain the future of Cash WinFall, which saw a sales decline of nearly 10 percent in 2011.

"This is generating income for us," said lottery director Sternburg, "but we're always looking to freshen up our portfolio."

This article was originally published July 31.

Solution to Techdoku

from page 11

8	4	7	1	5	9	3	2	6
9	5	8	2	6	1	4	3	7
5	1	4	7	2	6	9	8	3
2	7	1	4	8	3	6	5	9
6	2	5	8	3	7	1	9	4
7	3	6	9	4	8	2	1	5
3	8	2	5	9	4	7	6	1
4	9	3	6	1	5	8	7	2
1	6	9	3	7	2	5	4	8

Solution to Crossword

from page 10

S	A	G	S	S	C	R	U	B	D	R	A	B
G	U	R	U	T	I	A	R	A	M	A	M	A
T	R	I	P	P	G	A	S	W	I	T	C	H
S	A	T	I	A	T	E	L	A	N	E	S	T
N	S	C	B	R	O							
S	L	A	S	H	I	N	G	A	P	R	I	C
S	T	A	E	T	E	C	O	O	L	S	S	O
H	Y	P	E	C	I	V	L	I	R	P	I	E
A	R	E	R	A	N	I	N	M	A	N	S	E
H	O	D	I	N	G	A	G	R	U	D	G	E
C	R	A	S	H	E	S	C	N	T	O	W	E
F	I	G	H	T	I	N	G	A	T	I	C	K
O	N	C	E	N	A	L	E	A	L	E	E	
S	K	Y	S	G	E	L	I	D	R	Y	E	S

Solution to Sudoku

from page 11

3	7	5	2	8	6	1	4	9
4	8	1	3	9	7	6	2	5
6	9	2	4	1	5	3	8	7
2	4	8	5	7	3	9	6	1
7	6	9	1	4	8	2	5	3
1	5	3	6	2	9	8	7	4
5	2	7	8	3	1	4	9	6
8	3	6	9	5	4	7	1	2
9	1	4	7	6	2	5	3	8

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Solution to Techdoku

from page 11

8	4	7	1	5	9	3	2	6
9	5	8						

